RIM OEM Radio Modem for GSM/ GPRS Wireless Networks

RIM 1902G™ and RIM 1802G™

AT Command Reference Guide

Version 1.2

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Contents

About this guide

This guide lists the AT commands that apply to the RIM OEM Radio Modem for GSM/ GPRS Wireless Networks.

This guide includes information about the following commands:

Command	Description
V.25ter	The V.25ter commands correspond to the basic commands of AT Hayes-compatible modems for GSM 07.07. These commands include answering incoming calls, switching modes, and redialing.
GSM 07.07	The GSM 07.07 commands are used to remotely control GSM functionality, including phone book functionality. These commands include selecting bearer service types, entering PINs, and changing passwords.
GSM 07.05 for SMS	The GSM 07.05 commands are used to perform operations related to short message service (SMS) and cell broadcast service (CBS) for both text and protocol data unit (PDU) modes. These commands include deleting, transmitting, and saving SMS messages.
GSM 07.07 for GPRS	The GSM 07.07 for GPRS AT commands are required for all GPRS functionality, including PDP context definitions and activations quality of service (QoS) definitions and requests, GPRS attaches and detaches, PDP address retrieval GPRS mobile station class retrieval event reporting, network registration status retrieval, and SMS.

Related documentation

The Integrator Kit also includes the *Integrator Guide*, which explains how to integrate the RIM OEM Radio Modem for GSM/GPRS Wireless Networks into a variety of devices, such as laptop computers, handhelds, vending machines, point-of-sale terminals, vehicle-based mobile terminals, and alarm systems.

The following table describes other documents referenced in this guide.

Document	Description
GSM 07.05	This document is the source specification for AT modem commands that are specific to GPRS. The RIM OEM Radio Modem for GSM/GPRS Wireless Networks implements a subset of these commands.
GSM 07.07 version 4.3.0	This document is version 4.3.0 of the source specification for AT modem commands that are specific to GSM. The RIM OEM Radio Modem for GSM/GPRS Wireless Networks implements a subset of these commands.
GSM 07.07 version 5.6.0	This document is version 5.6.0 of the source specification for AT modem commands that are specific to GSM. The RIM OEM Radio Modem for GSM/GPRS Wireless Networks implements a subset of these commands.
ITU-T Recommendation V.25ter	This document is the source specification for standard AT modem commands.

Chapter 1
V.25 commands

This section provides information on supported V.25ter AT commands, which correspond to the commands of Hayes-compatible modems for GSM 07.07.

Command summary

Command	Description
A/	reissue the last command
+++AT	ESC from data mode to command mode
ATA	answer a call
ATD	mobile-initiated call to dialable number
ATD><mem><n>	initiate call to phone number in memory <mem>
ATD><n>	initiate call to phone number in current memory
ATD><str>	initiate call to phone number in memory with corresponding alphanumeric field
ATDL	redial last telephone number used
ATE	set command echo mode
ATH	disconnect existing connection
ATI	display product identification information
ATL	set monitor speaker volume
ATM	set monitor speaker mode
ATO	switch from command mode to data mode
ATP	select pulse dialing
ATQ	set result code presentation mode
ATS0	set number of rings before automatically answering the call
ATS1	count the number of incoming rings
ATS2	set the character used to escape from data mode

Command	Description
ATS3	set termination character for a command prompt
ATS4	set response formatting character
ATS5	set editing character for a command prompt
ATS6	set pause before blind dialing
ATS7	set number of seconds to wait for connection to complete
ATS8	set number of seconds to wait when there is a comma dial modifier
ATS10	set disconnection delay after indicating the absence of data carrier
ATS12	set the escape code guard time
ATS13	set the disconnection delay after a call has been terminated
ATT	select tone dialing
ATV	set result code format mode
ATX	set CONNECT result code format and call monitoring
ATZ	set all current parameters to a user-defined profile
AT&C	set circuit Data Carrier Detect (DCD) function mode
AT&D	set circuit Data Terminal Ready (DTR) function mode
AT&F	set all current parameters to manufacturer defaults
AT&V	display current configuration
AT&W	store current parameter to user-defined profile
AT+DR	V.42bis data compression reporting control
AT+DS	V.42bis data compression control

Command	Description
AT+GCAP	request complete terminal adaptor (TA) capabilities list
AT+GMI	request manufacturer identification
AT+GMM	request TA model identification
AT+GMR	request TA revision identification
AT+GSN	request TA serial number identification – International Mobile Equipment Identification (IMEI)
AT+ICF	set terminal equipment to terminal adaptor (TE-TA) control character framing
AT+IFC	set TE-TA local data flow control
AT+ILRR	set TE-TA local rate reporting mode
AT+IMODE	set the interface communication mode
AT+IPR	set fixed local rate

A/

Description Reissues the last command given.

Execute command

Syntax A/

Response Reissues the previous command.

Note: This command does not have to end with a terminating character.

Reference V.25ter

+++AT

Note: This command is not supported in this release of the RIM OEM Radio Modem for GSM/GPRS Wireless Networks. However, you can use the Hayes Escape Sequence to switch back to command mode. While you are in data mode, type +++ (do not follow with a carriage return), and pause 0.5 seconds to allow the switch to command mode. When the switch is successful, the OK response is returned.

Description ESC from data mode to command mode.

Execute command

Syntax `+++AT <waiting not more than 0.5 sec> <CR>`

Response If the terminal adaptor (TA) receives the characters +++AT followed by <CR> within 0.5 seconds, TA interrupts the data flow on the AT interface, switches to command mode and all characters that are received while waiting for <CR> are interpreted as commands.

OK

Note: The command is issued only in data state.

Reference TTP

ATA

Description Answers a call.

Execute command

Syntax ATA

Response TA sends off-hook to the remote station.

Note: Any additional commands on the same command line are ignored.
You can stop this command by pressing any key; however, this is not possible during some states of connection establishment, such as handshaking.

If a connection is successful:

CONNECT<text> **Note:** <text> only if parameter setting X>0

TA switches to data mode.

When TA returns to command mode after call release:

OK

If no connection:

NO CARRIER

Reference V.25ter

ATD

Description Mobile device initiates a call.

Execute command

Syntax ATD[<n>][<mgsm][;]

Response TA attempts to initiate an outgoing call.

Note: You can stop this command by pressing any key; however, this is not possible during some states of connection establishment, such as handshaking.

If no dial tone and (parameter setting X=2 or X=4):

NO DIALTONE

If busy and (parameter setting X=3 or X=4):

BUSY

If a connection cannot be established:

NO CARRIER

If a connection is successful on a non-voice call:

CONNECT<text> **Note:** <text> only if parameter setting X>0

TA switches to data state.

When TA returns to command mode after call release:

OK

If a connection is successful on a voice call:

```
OK
```

Parameters

<n>	String of dialing digits: 0-9, *, #, +, A, B, C. V.25ter modifiers are ignored: ,(comma), T, P, !, W, @.	
<mgsm>	String of GSM modifiers:	
	I	Override current Calling Line Identity Restriction (CLIR) setting for the call.
	G, g	closed user group (CUG) information, uses set with command +CCUG.
<;>	Voice call, return to command state.	

Reference V.25ter/GSM 07.07

ATD><mem><n>

Description Initiate call to phone number in memory <mem>.

Execute command

Syntax `ATD><mem><n>[<I>][<G>][;]`

Response TA attempts to initiate an outgoing call to a stored number.

Note: You can stop this command by pressing any key; however, this is not possible during some states of connection establishment, such as handshaking.

If error is related to mobile equipment (ME) functionality:

```
+CME ERROR: <err>
```

If no dial tone and (parameter setting X=2 or X=4):

```
NO DIALTONE
```

If busy and (parameter setting X=3 or X=4):

```
BUSY
```

If a connection cannot be established:

```
NO CARRIER
```

If the connection is successful on a non-voice call:

CONNECT<text> **Note:** <text> only if parameter setting X>0

TA switches to data state.

When TA returns to command mode after call release:

OK

If the connection is successful on a voice call:

OK

Parameters

<mem>	Phone book:	
	FD	SIM fix dialing-phone book.
	LD	SIM last-dialing-phone book.
	DC	ME dialed calls list.
	ON	SIM (or ME) own numbers (MSISDNs) list.
	SM	SIM phone book
<n>		integer-type memory location should be in the range of locations that are available in the memory that is used
<I>	I	override current CLIR setting for the call
<G>	G, g	CUG info, uses set with command +CCUG
<;>		voice call, return to command state

Reference V.25ter/GSM 07.07 version 4.3.0

Note: There is no <mem> for emergency call ("EN").

ATD><n>

Description Initiate a call to a phone number in the current memory.

Execute command

Syntax ATD><n>[<I>][<G>][;]

Response TA attempts to initiate an outgoing call to stored number.

The used memory is already selected by command +CPBS.

Note: You can stop this command by pressing any key; however, this is not possible during some states of connection establishment, such as handshaking.

If error is related to ME functionality:

+CME ERROR: <err>

If no dial tone and (parameter setting X=2 or X=4):

NO DIALTONE

If busy and (parameter setting X=3 or X=4):

BUSY

If a connection cannot be established:

NO CARRIER

If a connection successful on a non-voice call:

CONNECT<text> **Note:** <text> only if parameter setting X>0

TA switches to data state.

When TA returns to command mode releasing a call:

OK

If a connection is successful on a voice call:

OK

Parameters

<n>	Integer-type memory location should be in the range of locations that are available in the memory that is used.
<I>	Override current CLIR setting for the call.
<G>	G, g CUG info, uses set with command +CCUG.
<;>	Voice call, return to command state.

Reference V.25ter/GSM 07.07

ATD><str>

Description Initiate a call to a phone number in memory that has a corresponding alphanumeric field.

Execute command

Syntax ATD><str>[I][G][;]

Response TA attempts to initiate an outgoing call to the stored number.

All available memories are searched for the entry <str>.

Note: You can stop this command by pressing any key; however, this is not possible during some states of connection establishment, such as handshaking.

If error is related to ME functionality:

```
+CME ERROR: <err>
```

If no dial tone and (parameter setting X=2 or X=4):

```
NO DIALTONE
```

If busy and (parameter setting X=3 or X=4):

```
BUSY
```

If a connection cannot be established:

```
NO CARRIER
```

If a connection successful on a non-voice call:

CONNECT<text> **Note:** <text> only if parameter setting X>0

TA switches to data state.

When TA returns to command mode after releasing a call:

```
OK
```

If a connection successful on a voice call:

```
OK
```

Parameters

<str>	String type value ("x"), which should equal an alphanumeric field in at least one phone book entry in the searched memories.
<I>	Override current CLIR setting for the call.
<G>	G, g CUG info, uses set with command +CCUG.
<;>	Voice call, return to command state.

Reference V.25ter/GSM 07.07 version 4.3.0

ATDL

Description Redial last telephone number used.

Execute command

Syntax `ATDL[;]`

Response TA attempts to initiate an outgoing call to the last dialled number in the current session.

Note: You can stop this command by pressing any key; however, this is not possible during some states of connection establishment, such as handshaking.

If there is no last number or number is not valid:

`+CME ERROR`

If there is no dialtone and (parameter setting X=2 or X=4):

`NO DIALTONE`

If busy and (parameter setting `X=3` or `X=4`):

`BUSY`

If a connection cannot be established:

`NO CARRIER`

If a connection successful on a non-voice call:

`CONNECT<text>` **Note:** `<text>` only if parameter setting X>0

TA switches to data state.

When TA returns to command mode after call release:

`OK`

If a connection successful on a voice call:

`OK`

Parameters `<;>` Voice call.

Reference V.25ter/GSM 07.07 version 4.3.0

ATE

Description Set command echo mode.

Set command

Syntax `ATE[<value>]`

Response Determines whether the TA echoes characters that are received from terminal equipment (TE) during command state.

`OK`

Parameters

`<value>`	0	Echo mode off.
	1	Echo mode on (default).

Reference V.25ter

ATH

Description Disconnects existing connection.

Execute command

Syntax `ATH[n]`

Response Disconnect existing call by local TE from command prompt and terminate call

`OK`

Note: OK is issued after circuit 109(DCD) is turned off (if it was previously on).

Parameters

`<n>`	0	Disconnect from line and terminate call.

Reference V.25ter

ATI

Description Display product identification information.

Execute command

Syntax `ATI`

Response TA issues product information text

Example
```
Research In Motion
GPRS Radio Modem
Revision:  DD.MM.YY HH:MM
OK
```

Reference V.25ter

ATL

Description Set monitor speaker volume.

Set command

Syntax `ATL<value>`

Response No effect in GSM

`OK`

Parameters

`<value>`	`0`	low speaker volume
	`1`	low speaker volume
	`2`	medium speaker volume
	`3`	high speaker volume

Reference V.25ter

ATM

Description Set monitor speaker mode.

Set command

Syntax `ATM<value>`

Response No effect in GSM

`OK`

Parameters

`<value>`	0	speaker is always off
	1	speaker is on until TA informs TE that carrier has been detected
	2	speaker is always on when TA is off-hook

Reference V.25ter

ATO

Description Switch from command mode to data mode.

Execute command

Syntax `ATO[n]`

Response TA resumes the connection and switches back from command mode to data mode.

If the connection is not resumed successfully:

`NO CARRIER`

If the connection is resumed successfully:

TA returns to data mode from command mode `CONNECT <text>` **Note:** `<text>` only if parameter setting is `X>0`

Parameters

`<n>`	0	Switch from command mode to data mode.

Reference V.25ter

ATP

Description Select pulse dialing.

Set command

Syntax ATP

Response No effect in GSM.

```
OK
```

Reference V.25ter

ATQ

Description Set result code presentation mode.

Set command

Syntax ATQ[<n>]

Response Determines whether the TA transmits result codes to the TE. Information text that is transmitted in the response is not affected by this setting.

If <n>=0:

```
OK
```

If <n>=1:

```
(none)
```

Parameters

<n>	0	TA transmits result code (default).
	1	Result codes are suppressed and not transmitted.

Reference V.25ter

ATS0

Description Set the number of rings before automatically answering the call.

Read command

Syntax ATS0?

Response <n> OK

Set command

Syntax ATS0=[<n>]

Response Sets the number of rings before automatically answering the call.

OK

Parameters	<n>	0	Automatic answering is disabled (default).
		1-255	Automatic answering is enabled after the specified number of rings.

Reference V.25ter

ATS1

Description Count the number of incoming rings.

Read command

Syntax ATS1?

Response <n> OK

Set command

Syntax ATS1=[<n>]

Response If S0 is greater than 0 this register counts the incoming rings.

OK

Parameters	<n>	0	default
		0-255	number of rings

ATS2

Description Set the character used to escape from data mode.

Read command

Syntax `ATS2?`

Response `<n> OK`

Set command

Syntax `ATS2=[<n>]`

Response Sets the character that, when typed three times in data mode, returns the modem to command mode.

`OK`

Parameters			
	`<n>`	`0-127`	ASCII characters in decimal format
		`43`	"+" character (default)

ATS3

Description Set termination character for the command prompt.

Read command

Syntax `ATS3?`

Response `<n> OK`

Set command

Syntax `ATS3=[<n>]`

Response Determines the character that is recognized by TA to terminate an incoming command prompt. The TA also returns this character in output.

`OK`

Parameters			
	`<n>`	`0-127`	Command line termination character.
		`13`	CR (default).

Reference V.25ter

ATS4

Description Set a response formatting character.

Read command

Syntax `ATS4?`

Response `<n> OK`

Set command

Syntax `ATS4=[<n>]`

Response Determines the character that is generated by the TA for result code and information text.

`OK`

Parameters			
	`<n>`	`0-127`	Response formatting character.
		`10`	LF (default).

Reference V.25ter

ATS5

Description Set editing character for a command prompt.

Read command

Syntax `ATS5?`

Response `<n> OK`

Set command

Syntax ATS5=[<n>]

Response Determines the character that is recognized by TA as a request to delete the previous character from the command line.

OK

Parameters			
	<n>	0-127	Command prompt editing character.
		8	Backspace (default).

Reference V.25ter

ATS6

Description Set a pause before blind dialing.

Read command

Syntax ATS6?

Response <n> OK

Set command

ATS6=[<n>]

Response No effect in GSM.

OK

Parameters			
	<n>	0-255	Number of seconds to wait before blind dialing (default 2).

Reference V.25ter

ATS7

Description Set number of seconds to wait for the connection to complete.

Read command

Syntax ATS7?

Response <n> OK

Set command

Syntax ATS7=[<n>]

Response Determines the amount of time to wait for the connection to complete when answering or originating a call.

OK

Parameters

<n>	0-255	Number of seconds to wait for connection completion (default 60).

Reference V.25ter

ATS8

Description Set number of seconds to wait when comma dial modifier occurs.

Read command

Syntax ATS8?

Response <n> OK

Set command

Syntax ATS8=[<n>]

Response No effect in GSM.

OK

Parameters

<n>	0	No pause when comma encountered in dial string.
	1-255	Number of seconds to wait.

Reference V.25ter

ATS10

Description Set disconnection delay after indicating the absence of data carrier.

Read command

Syntax ATS10?

Response <n> OK

Set command

Syntax AT10=[<n>]

Response This parameter setting determines the amount of time that the TA will remain connected in absence of a data carrier. If the data carrier is detected again before disconnecting, the TA remains connected.

OK

Parameters

<n>	1-255	Number of tenths of seconds of delay (default 15).

Reference V.25ter

ATS12

Description Set the escape code guard time. The escape code guard time is the delay required prior to and immediately after the escape code. If the guard time is 0, there is no guard time and three consecutive escape characters cause the modem to enter command mode.

Read command

Syntax `ATS12?`

Response `<n> OK`

Set command

Syntax `ATS12=[<n>]`

Response This parameter specifies the minimum time before and after the escape sequence during which no data can be present..

`OK`

Parameters

`<n>`	10	default
	`0-255`	1/50th of a second

ATS13

Description Set the disconnection delay after a call has been terminated.

Read command

Syntax `ATS13?`

Response `<n> OK`

Set command

Syntax `AT13=[<n>]`

Response This parameter determines the amount of time the TA waits to disconnect a call after DTR has been dropped low (&D2 mode) or an ATH has been issued.

`OK`

Parameters

`<n>`	`0-255`	milliseconds (default is 60)

ATT

Description Select tone dialing.

Set command

Syntax `ATT`

Response No effect in GSM.

`OK`

Reference V.25ter

ATV

Description Set result code format mode.

Set command

Syntax `ATV[<value>]`

Response This parameter setting determines the contents of the header and trailer that are transmitted with result codes and information responses.

When `<value>=0`

`0`

When `<value>=1`

`OK`

Parameters

`<value>`	`0`	Information response: `<text><CR><LF>`. Short result code format: `<numeric code><CR>`.
	`1`	(default) Information response: `<CR><LF><text><CR><LF>`. Long result code format: `<CR><LF><verbose code><CR><LF>`.

Reference V.25ter

ATX

Description Set CONNECT result code format and call monitoring.

Set command

Syntax `ATX[<value>]`

Response This parameter setting determines whether the TA detected the presence of a dial tone and busy signal and whether the TA transmits particular result codes.

`OK`

Parameters <value>

0	CONNECT result code only returned, dial tone and busy detection are both disabled.
1	CONNECT<text> result code only returned, dial tone and busy detection are both disabled (default).
2	CONNECT<text> result code returned, dial tone detection is enabled, busy detection is disabled.
3	CONNECT<text> result code returned, dial tone detection is disabled, busy detection is enabled.
4	CONNECT<text> result code returned, dial tone and busy detection are both enabled.

Reference V.25ter

ATZ

Description Set all current parameters to user-defined profile.

Execute command

Syntax ATZ[<value>]

Response TA sets all current parameters to the user defined profile.

OK

Note: The user defined profile is stored in non volatile memory.
If the user profile is not valid, defaults to the factory default profile.
Any additional commands on the same command line are ignored.

Parameters <value> 0 Reset to profile number 0 (default).

Reference V.25ter

AT&C

Description Set circuit data carrier detect (DCD) function mode.

Set command

Syntax `AT&C[<value>]`

Response This parameter determines how the state of circuit 109(DCD) relates to the detection of received line signal from the distant end.

`OK`

Parameters

`<value>`	0	DCD line is always `ON`.
	1	DCD line is `ON` only in the presence of a data carrier (default).

Reference V.25ter

AT&D

Description Set circuit data terminal ready (DTR) function mode.

Set command

Syntax `AT&D[<value>]`

Response This parameter determines how the TA responds when circuit DTR is changed when a data session is active.

`OK`

Parameters

`<value>`	0	TA ignores status on DTR.
	1	`ON->OFF` on DTR: Change from data mode to command mode while remaining with the connected call (default).
	2	`ON->OFF` on DTR: Change from data mode to command mode, and disconnect the call. When DTR is inactive, auto-answer is off.
	4	`ON->OFF` on DTR: Change from data mode to command mode while remaining with the connected call. `OFF->ON` on DTR: Change from command mode to data mode. Use this mode to conserve power and queue incoming packets until the terminal is ready to communicate again. The DCE does not acknowledge serial traffic from the DTE when DTR is inactive.

Reference V.25ter

AT&F

Description Set all current parameters to the manufacturer defaults.

Execute command

Syntax `AT&F[value]`

Response TA sets all current parameters to the manufacturer -defined profile.

```
OK
```

Parameters

`<value>`	0	Set all TA parameters to the manufacturer defaults (default).

Reference V.25ter

AT&V

Description Display the current configuration.

Execute command

Syntax `AT&V[<n>]`

Response TA returns the current parameter setting.

```
<current configurations text> OK
```

Parameters

`<n>`	0	Profile number (default).

Reference TTP

AT&W

Description Store current parameter to user defined profile.

Execute command

Syntax `AT&W[<n>]`

Response TA stores the current parameter setting in the user defined profile.

`OK`

Note: The user-defined profile is stored in non-volatile memory.

Parameters `<n>` 0 Profile number to which to store the current parameter (default).

Reference TTP

AT+DR

Description V.42bis data compression reporting control.

Test command

Syntax `AT+DR=?`

Response `+DR:`(list of supported `<value>`s) `OK`

Parameters Refer to `set` command.

Read command

Syntax `AT+DR?`

Response `+DR: <value> OK`

Parameters Refer to `set` command.

Set command

Syntax `AT+DR=<value>`

Response This parameter setting determines whether or not the intermediate result code of the current data compressing is reported by TA to TE after a connection establishment.

`OK`

Parameters

`<value>`	0	Reporting disabled (default).
	1	Reporting enabled.

Intermediate result code

Syntax `+DR: <type>`

Note: This code is reported at call set up.

Parameters

`<type>`	`NONE`	Data compression is not in use.
	`V42B`	`Rec.` V42bis is in use in both directions.
	`V42B RD`	`Rec.` V42bis is in use in the receive direction only.
	`V42B TD`	`Rec.` V42bis is in use in the transmit direction only.

Reference V.25ter

AT+DS

Description V.42bis data compression control.

Test command

Syntax `AT+DS=?`

Response `+DS:`(list of supported `<p0>`s), (list of supported `<n>`s), (list of supported `<p1>`s), (list of supported `<p2>`s) `OK`

Parameters Refer to `set` command.

Read command

Syntax `AT+DS?`

Response `+DR: <p0>,<n>,<p1>,<p2> OK`

Parameters Refer to `set` command.

Set command

Syntax AT+DS=[<p0>,[<n>,[<p1>,[<p2>]]]]

Response This parameter setting determines the possible data compression mode by TA at the compression negotiation with the remote TA after a call set up.

OK

Note: This command is for data calls only. GSM transmits the data transparently. The remote TA might support this compression. Refer to **ITU V.42bis**

Parameters			
	<p0>	0	NONE.
		1	Transmit only.
		2	Receive only.
		3	Both directions, but allow negotiation (default).
	<n>	0	Allow negotiation of p0 down (default).
		1	do not allow negotiation of p0 - disconnect on difference.
	<p1>	512-2048	Dictionary size (default 512).
	<p2>	6-255	Maximum string size (default 20).

Reference V.25ter

Note: This command must be used in conjunction with command AT+CRLP to enable compression (+CRLP=X,X,X,X,1,X).

AT+GCAP

Description Request complete TA capabilities list.

Test command

Syntax AT+GCAP=?

Response OK

Execute command

Syntax AT+GCAP

Response TA returns a list of additional capabilities.

```
+GCAP: <name>s OK
```

Parameters <name> For example, +CGSM, +FCLASS, +DS.

Reference V.25ter

AT+GMI

Description Request manufacturer identification.

Test command

Syntax AT+GMI=?

Response OK

Execute command

Syntax AT+GMI

Response TA reports one or more lines of information text which permit the user to identify the manufacturer.

```
<manufacturer id> OK
```

Reference V.25ter

AT+GMM

Description Request TA model identification

Test command

Syntax AT+GMM=?

Response OK

Execute command

Syntax AT+GMM

Response TA reports one or more lines of information text which permit the user to identify the specific model of device.

```
<model id> OK
```

Reference V.25ter

AT+GMR

Description Request TA revision identification.

Test command

Syntax AT+GMR=?

Response OK

Execute command

Syntax AT+GMR

Response TA reports one or more lines of text that permits the user to identify the version, revision level or data or other information of the device.

```
<Revision id> OK
```

Reference V.25ter

AT+GSN

Description Request TA serial number identification – International Mobile Equipment Identification (IMEI).

Test command

Syntax AT+GSN=?

Response OK

Execute command

Syntax AT+GSN

Response TA reports the IMEI number in information text which permit the user to identify the individual ME device.

```
<sn> OK
```

Parameters <sn> IMEI of the telephone (International Mobile station Equipment Identity).

Reference V.25ter

Note: The serial number (IMEI) varies for each ME device.

AT+ICF

Description Set the TE-TA control character framing.

Test command

Syntax AT+ICF=?

Response +ICF:(list of supported <format>s), (list of supported <parity>s) OK

Parameters Refer to the set command.

Read command

Syntax AT+ICF?

Response +ICF: <format>,<parity> OK

Note: This framing is applied for the command state.

Parameters Refer to the set command.

Set command

Syntax AT+ICF=[<format>,[<parity>]]

Response This parameter setting determines the serial interface character framing format and the parity received by TA from TE.

OK

Note: +IPR=0 forces +ICF=0. The parity field is ignored if the format field specifies no parity.

Parameters

<format>	1	8 data 0 parity 2 stop bits
	2	8 data 1 parity 1 stop bits
	3	(default) 8 data 0 parity 1 stop bits
	4	7 data 0 parity 2 stop bits
	5	7 data 1 parity 1 stop bits
	6	7 data 0 parity 1 stop bits
<parity>	0	odd bit
	1	even bit
	2	mark (1) bit
	3	space (0) bit (default)

Reference V.25ter

AT+IFC

Description Set the TE-TA local data flow control.

Test command

Syntax AT+IFC=?

Response +IFC:(list of supported <dce_by_dte>s), (list of supported <dte_by_dce>s) OK

Parameters Refer to the set command.

Read command

Syntax AT+IFC?

Response +IFC: <dce_by_dte>,<dte_by_dce> OK

Note: This flow control is applied for data mode.

Parameters Refer to the set command.

Set command

Syntax AT+IFC=[<dce_by_dte>[,<dte_by_dce>]]

Response Determines the data flow control on the serial interface for data mode.

OK

Parameters

<dce_by_dte>		Specifies the method will be used by TE when it receives data from TA:
	0	None.
	1	XON/XOFF, do not pass characters on to data stack.
	2	Line 133: ready for receiving (default).
	3	XON/XOFF, pass characters on to data stack.
<dte_by_dce>		Specifies the method will be used by TA when it receives data from TE.
	0	None.
	1	XON/XOFF.
	2	Line 106: clear to send (default).

Reference V.25ter

Note: TTPCOM uses line 105(RTS) for this method.

AT+ILRR

Description Set the TE-TA local port rate reporting mode.

Test command

Syntax AT+ILRR=?

Response +ILRR:(list of supported <value>s OK

Parameters Refer to the set command.

Read command

Syntax AT+ILRR?

Response +ILRR: <value> OK

Parameters Refer to the set command.

Set command

Syntax AT+ILRR=<value>

Response This parameter setting determines whether an intermediate result code of the local port rate is reported when the connection is established. The rate is applied after the connection's final result code is transmitted to TE.

OK

Parameters

<value>	0	Disables reporting local port rate (default).
	1	Enables reporting local port rate.

Intermediate result

Syntax `+ILLR:<rate>`

Note: It indicates port rate settings on connection.

Parameters `<rate>` Port rate setting on call connection in bauds per second:
300
1200
2400
4800
9600
19200 (default)
28800
38400
57600
115200

Reference V.25ter

AT+IMODE

Description Set the interface communication mode.

Test command

Syntax `AT+IMODE=?`

Response `+IMODE: list of supported <mode>s OK`

Parameters Refer to `set` command.

Read command

Syntax `AT+IMODE?`

Response `+IMODE: <mode> OK`

Parameters Refer to `set` command.

Set command

Syntax AT+IMODE=<mode>

Response TA sets the communication interface mode specified by <mode>.

OK

Parameters

<mode>	0	AT command reference mode
	1	V25 interface mode
	2	DTR mode
	3	PIPE mode

AT+IPR

Description Set fixed local rate.

Test command

Syntax AT+IPR=?

Response +IPR: (list of supported auto detectable <rate>s),(list of supported fixed-only<rate>s) OK

Parameters Refer to the set command.

Read command

Syntax AT+IPR?

Response +IPR: <rate> OK

Parameters Refer to the set command.

Set command

Syntax `AT+IPR=<rate>`

Response This parameter setting determines the data rate of the TA on the serial interface. The rate of command takes effect following the issuance of any result code that is associated with the current command prompt.

`OK`

Parameters

`<rate>` Baud rate per second:

300
1200
2400
4800
9600
19200
28800
38400
57600
115200 (default)

Reference V.25ter

Summary of result codes for V.25ter commands

Response	Code	Type	Description
OK	0	final	command executed, no errors
CONNECT	1	intermediate	cnnection set up, if parameter setting X=0
CONNECT[<text<]	manuf.spec.	intermediate	connection set up, if parameter setting X>0
RING	2	unsolicited	ring detected
NO CARRIER	3	final	link not established or disconnected
ERROR	4	final	invalid command or command line too long
NO DIALTONE	6	final	no dial tone, dialing impossible, wrong mode
BUSY	7	final	remote station busy
NO ANSWER	8	final	connection completion time-out

Chapter 2
GSM 7.07 AT commands

This section provides information on GSM 07.07 commands for remote control of GSM functionality, including phone books.

Command summary

Command	Description
AT+CAOC	set advice of charge
AT+CBST	select bearer service type
AT+CCFC	call forwarding number and conditions control
AT+CCUG	closed User Group control
AT+CCWA	call Waiting Control
AT+CEER	extended error report
AT+CGMI	request manufacturer identification
AT+CGMM	request model identification
AT+CGMR	request revision identification
AT+CGSN	request product serial number identification (Identical with +GSN)
AT+CSCS	select TE Character Set
AT+CSTA	select Type of Address
AT+CHLD	call hold and multiparty
AT+CIMI	request international mobile subscriber identity
AT+CLCC	list current calls of ME
AT+CLCK	facility lock
AT+CLIP	calling line identification presentation
AT+CLIR	calling line identification restriction
AT+CLVL	set the volume

Command	Description
AT+CMEE	report mobile equipment error
AT+COLP	connected line identification presentation
AT+COPS	operator selection
AT+CPAS	mobile equipment activity status
AT+CPBF	find phone book entries
AT+CPBR	read current phone book entries
AT+CPBS	select phone book memory storage
AT+CPBW	write phone book entry
AT+CPIN	enter PIN
AT+CPWD	change password
AT+CR	service reporting control
AT+CRC	set cellular result codes for incoming call indication
AT+CREG	network registration
AT+CRLP	select radio link protocol parameters for originating non-transparent data call
AT+CSQ	signal quality report
AT+FCLASS	FAX: select, read or test service class
AT+FMI	FAX: report manufactured ID
AT+FMM	FAX: report model ID
AT+FMR	FAX: report revision ID
AT+VTD=<n>	tone duration
AT+VTS	DTMF and tone generation

AT+CAOC

Description Set the Advice of Charge supplementary service function mode.

Test command

Syntax AT+CAOC=?

Response +CAOC: (list of supported <mode>) OK

Parameters Refer to the execute command.

Read command

Syntax AT+CAOC?

Response +CAOC: <mode> OK

Parameters Refer to the execute command.

Execute command

Syntax AT+CAOC=<mode>

Response TA sets the Advice of Charge supplementary service function mode. If error is related to ME functionality:

+CME ERROR: <err>

If <mode>=0, TA returns the current call meter value:

+CAOC: <ccm> OK

If <mode>=1, TA deactivates the unsolicited reporting of CCM value:

OK

If <mode>=2, TA activates the unsolicited reporting of CCM value:

OK

Parameters

<mode>	0	query CCM value
	1	deactivate unsolicited reporting of CCM value
	2	activate unsolicited reporting of CCM value
<ccm>		string type; three bytes of the current CCM value in hexadecimal format (for example, "00001E" indicates decimal value 30); bytes are similarly coded as ACMmax value in the SIM 000000-FFFFFF.

Action command

Syntax AT+CA0C

Response TA returns the current call meter value (same as AT+CA0C=0).

Parameters Refer to the execute command.

Unsolicited result code

When activated, an unsolicited result code is sent when the CCM value changes, not more than every 10 seconds.

+CCCM: <ccm>

Reference GSM 07.07 [13]

AT+CBST

Description Select bearer service type.

Test command

Syntax AT+CBST=?

Response +CBST: (list of supported <speed>s) ,(list of supported <name>s) ,(list of supported <ce>s) OK

Parameters Refer to the set command.

Read command

Syntax AT+CBST?

Response +CBST: <speed>,<name>,<ce> OK

Parameters Refer to the set command.

Set command

Syntax AT+CBST=[<speed>] [,<name>[,<ce>]]]

Response TA selects the bearer service <name> with data rate <speed>, and the connection element <ce> to be used when data calls are originated.

```
OK
```

Parameters

<speed>	0	autobauding
	1	300 bps (V.21)
	2	1200 bps (V.22)
	3	1200/75 bps (V.23)
	4	2400 bps (V.22bis)
	5	2400 bps (V.26ter)
	6	4800 bps (V.32)
	7	(default) 9600 bps (V.32)
	12	9600 bps (V.34)
	14	14400 bps (V.34)
	65	300 bps (V.110)
	66	1200 bps (V.110 or X.31 flag stuffing)
	68	2400 bps (V.110 or X.31 flag stuffing)
	70	4800 bps (V.110 or X.31 flag stuffing)
	71	9600 bps (V.110 or X.31 flag stuffing)
	75	14400 bps (V.110 or X.31 flag stuffing)
<name>	0	asynchronous modem (default)
	2	PAD access (asynchronous)
<ce>	0	transparent
	1	non-transparent (default)

Reference GSM 07.07 version 5.6.0

Note: GSM 02.02[1]: lists the allowed combinations of the subparameters.

AT+CCFC

Description Determines call forwarding number and conditions.

Test command

Syntax AT+CCFC=?

Response +CCFC: (list of supported <reas>s) OK

Parameters Refer to execute command.

Execute command

Syntax
```
AT+CCFC = <reas>, <mode>
[, <number> [, <type> [,<class> [, <subaddr> [,<satype>
[,<time>]]]]]]
```

Response TA controls the call forwarding supplementary service. Registration, erasure, activation, deactivation, and status query are supported.

Only,<reas> and <mode> should be entered with mode (0-2,4)

If <mode><>2 and the command is successful:

```
OK
```

If there is a network error:

```
+CCFC: 0, 0
```

If <mode>=2 and the command is successful (only in connection with <reas> 0 – 3):

For registered call forward numbers:

```
+CCFC: <status>, <class1>[, <number>, <type> [, <time>]]
[<CR><LF>+CCFC: ....] OK
```

If no call forward numbers are registered (and therefore all classes are inactive):

```
+CCFC: <status>, <class> OK
```

where <status>=0 and <class>=7

If error is related to ME functionality:

```
+CME ERROR: <err>
```

Parameters

<reas>	0 unconditional 1 mobile busy 2 no reply 3 not reachable 4 all call forwarding (0-3) 5 all conditional call forwarding (1-3)
<mode>	0 disable 1 enable 2 query status 3 registration 4 erasure
<type>	Type of address in integer format; default 145 when dialing string includes international access code character "+", otherwise 129.
<number>	String type phone number of forwarding address in format specified by <type>.
<subaddr>	String type subaddress of format specified by <satype>.
<satype>	Type of subaddress in integer; default 128.
<class>	1 voice 2 data 7 all classes (default)
<time>	Time, rounded to a multiple of 5 seconds (default 20). 1...20..30
<status>	0 not active 1 active

Reference GSM 07.07 version 4.3.0

AT+CCUG

Description Closed user group (CUG) control.

Test command

Syntax AT+CCUG=?

Response OK

Read command

Syntax AT+CCUG?

Response +CCUG: <n>,<index>,<info> OK

If error is related to ME functionality:

+CME ERROR: <err>

Parameters Refer to the set command.

Set command

Syntax AT+CCUG=[<n>] [,<index>[,<info>]]]

Response TA sets the Closed User Group supplementary service parameters as a default adjustment for all following calls.

OK

If error is related to ME functionality:

+CME ERROR: <err>

Parameters

<n>	0 (default) disable CUG 1 enable CUG
<index>	0...9 CUG index (default 0) 10 no index (preferred CUG taken from subscriber data)
<info>	0 (default) no information 1 suppress OA (Outgoing Access) 2 suppress preferential CUG 3 suppress OA and preferential CUG

Reference GSM 07.07 version 4.3.0

AT+CCWA

Description Call waiting control.

Test command

Syntax AT+CCWA=?

Response +CCWA: (list of supported <n>s) OK

Parameters Refer to set command.

Read command

Syntax AT+CCWA?

Response +CCWA: <n> OK

Parameters Refer to set command.

Execution command

Syntax AT+CCWA=[<n>] [,<mode>[,<class>]]]

Response TA controls the call waiting supplementary service. Activation, deactivation, and status query are supported.

If there is a network error:

```
+CCWA: 0, 0
```

If <mode><>2 and the command is successful:

```
OK
```

If <mode>=2 and the command is successful:

```
+CCWA:<status>,<class1>[<CR><LF>+CCWA:<status>,<class2>[...]] OK
```

Note: <status>=0 is returned only if service is not active for any <class>.

When <mode>=2, all active call waiting classes are reported. In this mode, you can stop this command by pressing any key.

If error is related to ME functionality:

```
+CME ERROR: <err>
```

Parameters	<n>	0	Disable presentation of an unsolicited result code (default).
		1	Enable presentation of an unsolicited result code.
	<mode>		When <mode> parameter not given, network is not interrogated.
		0	disable
		1	enable
		2	query status
	<class>		A sum of integers each representing a class of information.
		1	voice (telephony)
		2	data (bearer service)
		4	fax (teleservice)
		7	equals to all classes (default)
	<status>	0	not active
		1	enable

Unsolicited result code

When the presentation call waiting at the TA is enabled (and Call Waiting is enabled) and call termination is attempted during an established call, an unsolicited result code is returned:

```
+CCWA: <number>,<type>,<class>[,<alpha>]
```

Parameters	<number>	string type phone number of calling address in format specified by <type>
	<type>	type of address octet in integer format; 145 when dialing string includes international access code character "+", otherwise 129
	<alpha>	optional string type alphanumeric representation of <number> corresponding to the entry found in phone book

Reference GSM 07.07 version 4.3.0

AT+CEER

Description Extended error report.

Test command

Syntax AT+CEER=?

Response OK

Execute command

Syntax AT+CEER

Response TA returns an extended report of the reason for the last call release.

```
+CEER: <report> OK
```

Parameters <report> Reason for last call release as number code

Reference GSM 07.07 version 4.3.0

AT+CGMI

Description Request manufacturer identification.

Test command

Syntax AT+CGMI=?

Response OK

Execute command

Syntax AT+CGMI

Response TA returns manufacturer identification text.

```
<manufacturer> OK
```

Parameters <manufacturer>

Reference GSM 07.07 version 4.3.0

AT+CGMM

Description Request model identification.

Test command

Syntax AT+CGMM=?

Response OK

Execute command

Syntax AT+CGMM

Response TA returns product model identification text.

<model> OK

Parameters <model>

Reference GSM 07.07 version 4.3.0

AT+CGMR

Description Request revision identification.

Test command

Syntax AT+CGMR=?

Response OK

Execute command

Syntax AT+CGMR

Response TA returns product software version identification text.

<revision> OK

Parameters <revision>

Reference GSM 07.07 version 4.3.0

AT+CGSN

Description Request product serial number identification (identical to +GSN).

Test command

Syntax AT+CGSN=?

Response OK

Execute command

Syntax AT+CGSN

Response Refer to +GSN

<sn> OK

Parameters Refer to +GSN

Reference GSM 07.07 version 4.3.0

AT+CSCS

Description Select TE character set.

Test command

Syntax AT+CSCS=?

Response +CSCS: (“GSM”)

Read command

Syntax AT+CSCS?

Response +CSCS: <chset> OK

Parameters <chset> “GSM” GSM default alphabet.

Set command

Syntax AT+CSCS=[<chset>]

Response Sets which character set <chset> is used by the TE. The TA can then convert character strings correctly between the TE and ME character sets.

Parameters <chset> "GSM" GSM default alphabet.

Reference GSM 07.07 version 4.3.0

AT+CSTA

Description Select type of address.

Test command

Syntax AT+CSTA=?

Response +CSTA: (129,145)

Read command

Syntax AT+CSTA?

Response +CSTA: <type> OK

Parameters <type> Current address type setting.

Set command

Syntax AT+CSTA=[<type>]

Response Selects the type of number for further dialing commands according to GSM specifications. The data services software only supports default settings.

Parameters

<type>	129	Type unknown (default).
	145	Type international.

Note: The ATD command overrides this setting when a number is dialed; for example, if the dial string has '+' at start, the type of number is set to **145**, otherwise it is set to **129**.

AT+CHLD

Description Call hold and multiparty.

Test command

Syntax AT+CHLD=?

Response +CHLD: list of supported <n>s OK

Execute command

Syntax AT+CHLD=[<n>]

Response TA controls the supplementary services call hold, multiparty, and explicit call transfer. Calls can be put on hold, recovered, released, added to conversation, and transferred.

Note: These supplementary services are only applicable to teleservice 11 (Speech: Telephony).

OK

If error is related to ME functionality:

+CME ERROR: <err>

Parameters

<n>	0	Terminate all held calls or user determined user busy (UDUB) for a waiting call.
	1	Terminate all active calls (if any) and accept the other call (waiting call or held call).
	1X	Terminate the active call number X (X= 1-7).
	2	Place all active calls on hold (if any) and accept the other call (waiting call or held call) as the active call.
	2X	Place all active calls except call X (X= 1-7) on hold.
	3	Add the call on hold to the active calls.

Reference GSM 07.07 version 4.3.0

AT+CIMI

Description Request international mobile subscriber identity.

Test command

Syntax `AT+CIMI=?`

Response `OK`

Execute command

Syntax `AT+CIMI`

Response TA returns `<IMSI>` for identifying the individual SIM that is attached to ME.

```
+CIMI: <IMSI> OK
```

If error is related to ME functionality:

```
+CME ERROR: <err>
```

Parameters `<IMSI>` International mobile subscriber identity (string without double quotes).

Reference GSM 07.07 version 4.3.0

AT+CLCC

Description List current calls of ME.

Test command

Syntax `AT+CLCC=?`

Response `OK`

Execute command

Syntax `AT+CLCC`

Response TA returns a list of current calls of ME.

Note: If command succeeds but no calls are available, no information response is sent to TE.

```
[+CLCC: <id1>,<dir>,<stat>,<mode>,<mpty>[,
<number>,<type>[,<alpha>]]
[<CR><LF>+CLCC: <id2>,<dir>,<stat>,<mode>,<mpty>[,
<number>,<type>[,<alpha>]]
[...]]] OK
```

If error is related to ME functionality:

```
+CME ERROR: <err>
```

Parameters

<idx>	Integer type; call identification number as described in GSM 02.30[19] subclause 4.5.5.1; this number can be used in +CHLD command operations.
<dir>	0 Mobile originated (MO) call. 1 Mobile terminated (MT) call.
<stat>	State of the call: 0 active 1 held 2 dialing (MO call) 3 alerting (MO call) 4 incoming (MT call) 5 waiting (MT call)
<mode>	bearer/tele service: 0 voice 1 data 2 fax 9 unknown
<mpty>	0 Call is not one of multiparty (conference) call parties. 1 Call is one of multiparty (conference) call parties.
<number>	string type phone number in format specified by <type>
<type>	type of address octet in integer format; 145 when dialing string includes international access code character "+", otherwise 129
<alpha>	string type alphanumeric representation of <number> corresponding to the entry found in phone book

Reference GSM 07.07 version 4.3.0 version 5.6.0

AT+CLCK

Description Facility lock.

Test command

Syntax AT+CLCK=?

Response +CLCK: (list of supported <fac>s) OK

Parameters Refer to execute command.

Execute command

Syntax
```
AT+CLCK = <fac>,  <mode>
[,<passwd>
[,<class>]]
```

Response This command is used to lock, unlock, or interrogate an ME or a network facility <fac>. A password is normally required to perform such actions. When querying the status of a network service (<mode>=2), the response line for an inactive status (<status>=0) should be returned only if the service is not active for any <class>.

If <mode><>2 and command is successful:

OK

If <mode>=2 and command is successful:

```
+CLCK: <status>[,<class1>[<CR><LF>
+CLCK: <status>, class2....]] OK
```

If error is related to ME functionality:

```
+CME ERROR: <err>
```

Parameters

<fac>	"PS"	PH-SIM (lock PHone to SIM card) (ME asks password when other than current SIM card is inserted; ME might remember certain amount of previously used cards, thus not requiring password when they are inserted).
	"SC"	SIM (lock SIM card) (SIM asks password in ME power-up and when this lock command issued)
	"AO"	Bar all outgoing calls (BAOC) (refer GSM02.88[6] clause 1)
	"OI"	Bar Outgoing International Calls (BOIC) (refer GSM02.88[6] clause 1)

	"OX"	Bar Outgoing International Calls except to Home Country (BOIC-exHC) (refer GSM02.88[6] clause 1)
	"AI"	Bar All Incoming Calls (BAIC) (refer to GSM02.88[6] clause 2).
	"IR"	Bar Incoming Calls when Roaming outside the home country (BIC-Roam) (refer GSM02.88 [6] clause 2).
	"AB"	All barring services (refer GSM02.30[19]) (applicable only for <mode>=0).
	"AG"	All outgoing barring services (refer GSM02.30[19]) (applicable only for <mode>=0).
	"AC"	All incoming barring services (refer GSM02.30[19]) (applicable only for <mode>=0).
	"PN"	network personalization (refer GSM 02.22[33])
	"PU"	network subset personalization (refer GSM 02.22[33])
	"PP"	service provider personalization (refer GSM 02.22[33])
	"PC"	corporate personalization (refer GSM 02.22[33])
<mode>	0	unlock
	1	lock
	2	query status (default)
<passwd>		password
<class>	1	voice
	2	data
	4	fax
	7	all classes (default)
<status>	0	off
	1	on

Reference GSM 07.07 version 5.6.0

AT+CLIP

Description Calling line identification presentation.

Test command

Syntax `AT+CLIP=?`

Response `+CLIP:` (list of supported `<n>`s) `OK`

Parameters see set command

Read command

Syntax `AT+CLIP?`

Response `+CLIP: <n>, <m> OK`

If error is related to ME functionality:

`+CME ERROR: <err>`

Parameters see set command

Set command

Syntax `AT+CLIP=<n>`

Response TA enables or disables the presentation of the CLI at the TE. It has no effect on the execute of the supplementary service CLIP in the network.

`OK`

If error is related to ME functionality:

`+CME ERROR: <err>`

Parameters

`<n>`
- `0` suppress unsolicited result codes
- `1` display unsolicited result codes

`<m>`
- `0` CLIP not provisioned
- `1` CLIP provisioned
- `2` unknown

Unsolicited result code

When the presentation of the CLI at the TE is enabled (and calling subscriber allows), an unsolicited result code is returned after every `RING` (or `+CRING: <type>`) at a mobile terminating call.

```
+CLIP: <number>, <type>
```

Parameters

`<number>`	String type phone number of calling address in format specified by `<type>`.
`<type>`	Type of address octet in integer format; `145` when dialing string includes international access code character "+", otherwise `129`.

Reference GSM 07.07 version 4.3.0

AT+CLIR

Description Calling line identification restriction.

Test command

Syntax `AT+CLIR=?`

Response `+CLIR:` (list of supported `<n>`s) `OK`

Parameters Refer to `set` command.

Read command

Syntax `AT+CLIR?`

Response `+CLIR: <n>, <m> OK`

If error is related to ME functionality:

`+CME ERROR: <err>`

Parameters Refer to `set` command.

Set command

Syntax AT+CLIR=<n>

Response TA restricts or enables the presentation of the CLI to the called party when initiating a call.

The command overrides the CLIR subscription (default is restricted or allowed) when temporary mode is provisioned as a default adjustment for all following outgoing calls. This adjustment can be revoked by using the opposite command.

```
OK
```

If error is related to ME functionality:

```
+CME ERROR: <err>
```

Parameters

<n> Sets the adjustment for outgoing calls:

0 (default) – presentation indicator is used according to the subscription of the CLIR service.

1 – CLIR invocation.

2 – CLIR suppression.

<m> Shows the subscriber CLIR service status in the network):

0 – CLIR is not provisioned.

1 – CLIR is provisioned in permanent mode.

2 – unknown (for example, no network).

3 – CLIR temporary mode presentation restricted.

4 – CLIR temporary mode presentation allowed.

Reference GSM 07.07 version 4.3.0

AT+CLVL

Description Set the speaker volume.

Execute command

Syntax AT+CLVL=<nn>

Response TA sets the speaker volume level.

OK

If error is related to ME functionality:

+CME ERROR: <err>

Parameters

<nn>	Specify the value of the speaker volume level. The number represents the percentage of the maximum volume (0-100). The default setting is **85**.
?	Queries the current speaker volume setting.
=?	Lists range of possible settings (0-100).

Reference GSM 7.07

AT+CMEE

Description Report mobile equipment error.

Test command

Syntax AT+CMEE=?

Response +CMEE: (list of supported <n>s) OK

Parameters see set command

Read command

Syntax AT+CMEE?

Response +CMEE: <n> OK

Parameters see set command

Set command

Syntax AT+CMEE=<n>

Response TA disables or enables the use of result code +CME ERROR: <err> to indicate an error related to ME functionality.

OK

Parameters <n> 0 Disable result code (default).
1 Enable result code and use numeric values.
2 Enable result code and use detailed values.

Reference GSM 07.07 version 4.3.0

AT+COLP

Description Connected line identification presentation.

Test command

Syntax AT+COLP=?

Response +COLP: (list of supported <n>s) OK

Parameters Refer to set command.

Read command

Syntax AT+COLP?

Response +COLP: <n>,<m> OK

If error is related to ME functionality:

+CME ERROR: <err>

Parameters Refer to set command.

Set command

Syntax AT+COLP=[<n>]

Response TA enables or disables the presentation of the Connected Line (COL) at the TE for a mobile originated call. It has no effect on the supplementary service COLP in the network.

Intermediate result code is returned from TA to TE before any +CR or V.25ter responses.

```
OK
```

Parameters

<n> Sets/shows the result code presentation status in the TA:
- 0 Disable (default).
- 1 Enable.

<m> shows the subscriber COLP service status in the network:
- 0 COLP is not provisioned.
- 1 COLP is provisioned.
- 2 Unknown (for example, no network).

Intermediate result code

When enabled (and called subscriber allows), an intermediate result code is returned before any +CR or V.25ter responses:

```
+COLP:<number>,<type>[,<subaddr>,<satype> [,<alpha>]]
```

Parameters

<number>	String type phone number of format specified by <type>.
<type>	Type of address octet in integer format; 145 when dialing string includes international access code character "+", otherwise 129.
<subaddr>	String type subaddress of format specified by <satype>
<satype>	Type of subaddress octet in integer format (refer GSM 04.08 [8] sub clause 10.5.4.8).
<alpha>	Optional string type alphanumeric representation of <number> corresponding to the entry found in phone book.

Reference GSM 07.07 version 4.3.0

AT+COPS

Description Operator selection.

Test command

Syntax AT+COPS=?

Response TA returns a list of quadruplets, which each represent an operator that is present in the network. Any unavailable formats are represented by an empty field. The operators are listed in the following order: home network, networks referenced in SIM, and other networks.

```
+COPS: list of supported(<stat>, long alphanumeric <oper>, numeric
<oper>)s [,,(list of supported <mode>s),(list of supported <format>s)] OK
```

If error is related to ME functionality:

```
+CME ERROR: <err>
```

Parameters Refer to `set` command.

Read command

Syntax AT+COPS?

Response TA returns the current mode and the currently selected operator. If no operator is selected, <format> and <oper> are omitted.

```
+COPS: <mode>[, <format>[, <oper>]] OK
```

If error is related to ME functionality:

```
+CME ERROR: <err>
```

Parameters Refer to `set` command.

Set command

Syntax

```
AT+COPS = <mode>
[, <format>[, <oper>]]
```

Response TA forces an attempt to select and register the GSM network operator. If the selected operator is not available, no other operator is selected (except <mode>=4). The selected operator name format applies to further read commands (+COPS?).

```
OK
```

If error is related to ME functionality:

```
+CME ERROR: <err>
```

Parameters

<stat>	0 Unknown. 1 Operator available. 2 Operator current. 3 Operator forbidden.
<oper>	Operator in format as per <mode>.
<mode>	0 Automatic mode; <oper> field is ignored. 1 Manual operator selection; <oper> field is present. 2 Manual deregisteration from the network. 3 Set only <format> (for read command +COPS?) – not shown in read command response. 4 Manual/automatic selected; if manual selection fails, automatic mode (<mode>=0) is entered.
<format>	0 Long format alphanumeric <oper>; can be up to 16 characters long. 1 Short format alphanumeric <oper>. 2 Mumeric <oper>; GSM location area identification number.

Reference GSM 07.07 version 5.6.0

AT+CPAS

Description Mobile equipment activity status.

Test command

Syntax AT+CPAS=?

Response +CPAS: (list of supported <pas>s) OK

Parameters see execute command

Execute command

Syntax AT+CPAS

Response TA returns the activity status of ME.

```
+CPAS: <pas> OK
```

If error is related to ME functionality:

```
+CME ERROR: <err>
```

Parameters

<pas>
- 0 Ready.
- 2 Unknown (ME is not guaranteed to respond to instructions).
- 3 Incoming call (ringing).
- 4 Call in progress or call hold.

Reference GSM 07.07 version 4.3.0

AT+CPBF

Description Find phone book entries.

Test command

Syntax `AT+CPBF=?`

Response `+CPBF:` [maximum length of field `<nlength>`)],[maximum length of field `<tlength>`]
`OK`

Parameters see execute command

Execute command

Syntax `AT+CPBF=<findtext>`

Response TA returns phone book entries (from the current phone book memory storage selected with +CPBS) which contain alphanumeric string `<findtext>`.

```
[+CPBF: <index1>,<number>,<type>,<text>[[...]
<CR><LF>+CBPF: <index2>,<number>,<type>,<text>] OK]
```

If error is related to ME functionality:

```
+CME ERROR: <err>
```

Parameters	<index1>, <index2>	Integer type values in the range of location numbers of phone book memory.
	<number>	String type phone number of format <type>.
	<type>	Type of address octet in integer format; 145 when dialling string includes international access code character "+", otherwise 129.
	<findtext>, <text>	String type field of maximum length <tlength>.
	<nlength>	Integer type value indicating the maximum length of field <number>.
	<tlength>	Integer type value indicating the maximum length of field <text>.

Reference GSM 07.07 [13]

AT+CPBR

Description Read current phone book entries.

Test command

Syntax AT+CPBR=?

Response TA returns the location range that is supported by the current storage as a compound value and the maximum lengths of <number> and <text> fields.

+CPBR: (list of supported <index>s), <nlength>, <tlength> OK

If error is related to ME functionality:

+CME ERROR: <err>

Parameters	<index>	Location number.
	<nlength>	Maximum length of phone number.
	<tlength>	Maximum length of text for number.

Execute command

Syntax `AT+CPBR = <index1>`
`[, <index2>]`

Response TA returns phone book entries in the location number range `<index1>... <index2>` from the current phone book memory storage, which is selected with `+CPBS`. If `<index2>` is left out, only location `<index1>` is returned.

`+CPBR: <index1>, <number>, <type>, <text>[<CR><LF>+CPBR: .....+CPBR: <index2>, <number>, <type>, <text>] OK`

If error is related to ME functionality:

`+CME ERROR`

Parameters

`<index1>`	Read as of this location number.
`<index2>`	Read to this location number.
`<number>`	Phone number.
`<type>`	Type of number.
`<text>`	Text for phone number.

Reference GSM 07.07 [13].

AT+CPBS

Description Select phone book memory storage

Test command

Syntax `AT+CPBS=?`

Response `+CPBS:` (list of supported `<storage>`s) `OK`

If error is related to ME functionality:

`+CME ERROR: <err>`

Parameters Refer to `set` command.

Read command

Syntax AT+CPBS?

Response TA returns currently selected memory

+CPBS: <storage> OK

If error is related to ME functionality:

+CME ERROR: <err>

Parameters Refer to set command.

Set command

Syntax AT+CPBS=<storage>

Response TA selects current phone book memory storage, which is used by other phone book commands.

OK

If error is related to ME functionality:

+CME ERROR: <err>

Parameters

<storage>	"DC"	ME dialed calls list(+CPBW may not be applicable for this storage).
	"FD"	SIM fix-dialing-phone book.
	"LD"	SIM last-dialing-phone book.
	"ON"	SIM (or ME) own numbers (MSISDNs) list.
	"SM"	SIM phone book.

Reference GSM 07.07 [13]

AT+CPBW

Description Write phone book entry.

Test command

Syntax `AT+CPBW=?`

Response TA returns the location range that is supported by the current storage, the maximum length of <number> field, supported number formats of the storage, and the maximum length of <text> field.

```
+CPBW: (list of supported <index>s), <nlength>, (list of supported
<typ>s), <tlength> OK
```

If error is related to ME functionality:

```
+CME ERROR: <err>
```

Parameters Refer to `execute` command.

Execute command

Syntax `AT+CPBW = [<index>], [<number>, [<type>, [<text>]]]`

Response TA writes phone book entry in location number <index> in the current phone book memory storage that is selected with +CPBS. TA writes the following fields: <number> (in the format <type>) and the <text> associated with the number. If those fields are omitted, the phone book entry is deleted. If <index> is omitted, but <number> is provided, the entry is written to the first free location in the phone book.

```
OK
```

If error is related to ME functionality:

```
+CME ERROR: <err>
```

Parameters

<nlength>	Maximum length of phone number.
<tlength>	Maximum length of text for number.
<index>	Location number.
<number>	Phone number.
<type>	Type of number; for example, 145 when dialing string includes international access code character "+", otherwise 129.
<text>	Text for phone number.

Note: The following characters in <text> must be entered using the escape sequence:
GSM char. Seq. Seq.(hex)
\ \5C 5C 35 43 (backslash)
" \22 5C 32 32 (string delimiter)
BSP \08 5C 30 38 (backspace)
NULL \00 5C 30 30 (GSM null)
'0' (GSM null) might cause problems for application-layer software when reading string lengths.

Reference GSM 07.07 version 4.3.0

AT+CPIN

Description Enter PIN.

Test command

Syntax AT+CPIN=?

Response OK

Read command

Syntax AT+CPIN?

Response TA returns an alphanumeric string that indicates whether a password is required.

```
+CPIN: <code> OK
```

If error is related to ME functionality:

```
+CME ERROR: <err>
```

Parameters

<code>	READY	No further entry needed.
	SIM PIN	ME is waiting for SIM PIN.
	SIM PUK	ME is waiting for SIM PUK.
	PH_SIM PIN	ME is waiting for phone to SIM card (antitheft).
	PH_SIM PUK	ME is waiting for SIM PUK (antitheft).
	SIM PIN2	PIN2, for example, for editing the FDN book possible only if preceding command was acknowledged with +CME ERROR:17.
	SIM PUK2	possible only if preceding command was acknowledged with error +CME ERROR:18.

Set command

Syntax `AT+CPIN=<pin>`
`[, <new pin>]`

Response TA stores a password, which is required before it can be operated (`SIM PIN`, `SIM PUK`, `PH-SIM PIN`, and so on). If the PIN must be entered twice, the TA automatically repeats the PIN. If no PIN request is pending, no action is taken and an error message, `+CME ERROR`, is returned to TE.

If the PIN required is `SIM PUK` or `SIM PUK2`, the second pin is required. This second pin, `<newpin>`, is used to replace the old pin in the SIM.

`OK`

If error is related to ME functionality:

`+CME ERROR: <err>`

Parameters

`<pin>`	Password, in string format.
`<new pin>`	New password, in string format (if the PIN required is `SIM PUK` or `SIM PUK2`).

Reference GSM 07.07 version 4.3.0

AT+CPWD

Description Change password.

Test command

Syntax `AT+CPWD=?`

Response TA returns a list of pairs that show the available facilities and the maximum length of their associated password.

`+CPWD:` list of supported `(<fac>, <pwdlength>)`s `OK`

If error is related to ME functionality:

`+CME ERROR: <err>`

Parameters

`<fac>`	Otherwise see execute command, without `"FD"`.
`<pwdlength>`	Integer maximum length of password.

Execute command

Syntax `AT+CPWD = <fac>, [<oldpwd>], <newpwd>`

Response TA sets a new password for the facility lock function.

`OK`

If error is related to ME functionality:

`+CME ERROR: <err>`

Parameters

`<fac>`	`"SC"`	SIM (lock SIM card) – SIM requests a password during ME startup and when this lock command is issued.
	`"AO"`	Bar all outgoing calls (BAOC) – refer to GSM02.88[6] clause 1.
	`"OI"`	Bar outgoing international calls (BOIC) – refer to GSM02.88[6] clause 1.
	`"OX"`	Bar outgoing international calls except to home country (BOIC-exHC) – refer to GSM02.88[6] clause 1.
	`"AI"`	Bar all incoming calls (BAIC) – refer to GSM02.88[6] clause 2.
	`"IR"`	Bar incoming calls when roaming outside the home country (BIC-Roam) – refer to GSM02.88 [6] clause 2.
	`"AB"`	All barring services – refer to GSM02.30[19] (applicable only for `<mode>`=0).
	`"AG"`	All outgoing barring services – refer to GSM02.30[19] (applicable only for `<mode>`=0).
	`"AC"`	All incoming barring services – refer to GSM02.30[19] (applicable only for `<mode>`=0).
	`"P2"`	SIM PIN2`<oldpwd>`password specified for the facility from the user interface or with command. If an old password has not yet been set, `<oldpwd>` is not required.
`<newpwd>`	New password.	

Reference GSM 07.07 version 4.3.0

AT+CR

Description Service reporting control.

Test command

Syntax AT+CR=?

Response +CR: list of supported <mode> OK

Parameters Refer to set command.

Read command

Syntax AT+CR?

Response +CR: <mode> OK

Parameters Refer to set command.

Set command

Syntax AT+CR=<mode>

Response TA controls whether intermediate result code +CR: <serv> is returned from the TA to the TE at a call setup.

OK

Parameters

<mode>
- 0 Disable (default).
- 1 Enable.

Intermediate result code

If enabled, an intermediate result code is transmitted at the point during connection negotiation at which the TA has determined which speed and quality of service will be used, before any error control or data compression reports are transmitted, and before any final result code (for example, CONNECT) is transmitted.

```
+CR:<serv>
```

Parameters			
	<serv>	ASYNC	Asynchronous transparent.
		SYNC	Synchronous transparent.
		REL ASYNC	Asynchronous non-transparent.
		REL SYNC	Synchronous non-transparent.

Reference GSM 07.07 version 4.3.0

AT+CRC

Description Set cellular result codes (CRC) for incoming call indication

Test command

Syntax AT+CRC=?

Response +CRC: list of supported <mode> OK

Parameters Refer to set command.

Read command

Syntax AT+CRC?

Response +CRC: <mode> OK

Parameters Refer to set command.

Set command

Syntax AT+CRC=<mode>

Response TA controls whether the extended format of incoming call indication is used.

OK

Parameters

<mode>	0	Disable extended format (default).
	1	Enable extended format.

Unsolicited result code

When enabled, an incoming call is indicated to the TE with unsolicited result code+CRING: <type> instead of the normal RING.

Parameters

<type>	ASYNC	Asynchronous transparent.
	SYNC	Synchronous transparent.
	REL ASYNC	Asynchronous non-transparent.
	REL SYNC	Synchronous non-transparent.
	FAX	Facsimile.
	VOICE	Voice.

Reference GSM 07.07 version 4.3.0

AT+CREG

Description Network registration.

Test command

Syntax AT+CREG=?

Response +CREG: list of supported <n>s OK

Parameters Refer to set command.

Read command

Syntax AT+CREG?

Response TA returns the status of result code presentation and an integer <stat>, which shows whether the network has currently indicated the registration of the ME. Location information elements <lac> and <ci> are returned only when <n>=2 and ME is registered in the network.

```
+CREG: <n>,<stat> OK
```

If error is related to ME functionality:

```
+CME ERROR: <err>
```

Parameters Refer to set command.

Set command

Syntax AT+CREG=[<n>]

Response TA controls the presentation of an unsolicited result code +CREG: <stat> when <n>=1 and there is a change in the ME network registration status.

```
OK
```

Parameters

<n>	0	Disable network registration unsolicited result code (default).
	1	Enable network registration unsolicited result code +CREG: <stat>.
<stat>	0	Not registered, ME is not currently searching a new operator to which to register.
	1	Registered, home network.
	2	Not registered, but ME is currently searching a new operator to which to register.
	3	Registration denied.
	4	Unknown.
	5	Registered, roaming.

Unsolicited result code

When <n>=1 and there is a change in the ME network registration status: +CREG: <stat>

Parameters Refer to set command.

Reference GSM 07.07 version 4.3.0

AT+CRLP

Description Select radio link protocol (RLP) parameter for originated non-transparent data call.

Test command

Syntax AT+CRLP=?

Response TA returns supported values. RLP versions 0 and 1 share the same parameter set. TA returns only one line for this set (where <verx> is not present).

+CRLP: (list of supported <iws>s), (list of supported <mws>s), (list of supported <T1>s), (list of supported <N2>s), (list of supported <ver1>s), (list of supported <T4>s)

```
...
OK
```

Parameters see set command

Read command

Syntax AT+CRLP?

Response TA returns current settings for RLP version. RLP versions 0 and 1 share the same parameter set. TA returns only one line for this set (where <verx> is not present).

```
+CRLP: <iws>,<mws>,<T1>,<N2>,<ver1>,<T4>
...
OK
```

Parameters Refer to set command.

Set command

Syntax AT+CRLP=[<iws>[,<mws>[,<T1>[,<N2>[,<ver>[,<T4>]]]]]]

Response TA sets RLP parameters used when non-transparent data calls are set up.

OK

Parameters

<iws>	0-61	Interworking window size – IWF to MS (default 61).
<mws>	0-61	Mobile window size – MS to IWF.
<T1>	39-255	Acknowledgment timer T1 in 10 ms units (default 48).
<N2>	1-255	Retransmission attempts N2 (default 6).
<verx>	0-1	RLP version number in integer format, or 0 when version indication is not present (default 0). Versions 0 and 1 share the same parameter set.
<T4>	3-255	Re-sequencing period in integer format, in units of 10 ms (default 3). This is not used for RLP versions 0 and 1.

Reference GSM 07.07 version 5.6.0

AT+CSQ

Description Signal quality report.

Test command

Syntax AT+CSQ=?

Response +CSQ: (list of supported <rssi>s),(list of supported <ber>s)

Parameters Refer to execute command.

Execute command

Syntax AT+CSQ

Response

```
+CSQ: <rssi>,<ber>
+CME ERROR: <err>
```

The execution command returns the received signal strength indication <rssi> and channel bit error rate <ber> from the ME. The test command returns the values that are supported by the TA.

Parameters	<rssi>	0 -113 dBm or less. 1 -111 dBm. 2...30 -109... -53 dBm. 31 -51 dBm or greater. 99 not known or not detectable.
	<ber> (percent)	0...7 as RXQUAL values in the table in GSM 05.08 [20] subclause 8.2.4. 99 not known or not detectable.

Reference GSM 07.07 version 4.3.0

AT+FCLASS

Note: This command is not supported in this release of the RIM OEM Radio Modem for GSM/GPRS Wireless Networks.

Description FAX: select, read, or test service class

Test command

Syntax AT+FCLASS=?

Response +FCLASS: list of supported <n> OK

Parameters see set command

Read command

Syntax AT+FCLASS?

Response +FCLASS: <n> OK

Parameters see set command

Set command

Syntax AT+FCLASS=<n>

Response TA sets a particular mode of operation (data, fax). This causes the TA to process information in a manner suitable for that type of information.

OK

Parameters <n> 0 data
1 fax class 1 (TIA-578-A)
Note: This command is not supported; it should always return 0.

Reference GSM 07.07 [13]

AT+FMI

Description FAX: report manufactured ID.

Test command

Syntax AT+FMI=?

Response OK

Execute command

Syntax AT+FMI

Response TA reports one or more lines of text that identifies the manufacturer.

<manufacturer Id> OK

Parameters <manufacturer Id>

Reference EIA/TIA-578-D

AT+FMM

Description FAX: report model ID.

Test command

Syntax AT+FMM=?

Response OK

Execute command

Syntax AT+FMM

Response TA reports one or more lines of text that identify the model of device.

<model Id> OK

Parameters <model Id> TTPCOM

Reference EIA/TIA-578-D

AT+FMR

Description FAX: report revision ID.

Test command

Syntax AT+FMR=?

Response OK

Execute command

Syntax AT+FMR

Response TA reports one or more lines of text that provides the version, revision level, or other information about the device.

<Revision Id> OK

Parameters <Revision Id> Revision: 0.01

Reference EIA/TIA-578-D

AT+VTD=<n>

Description Tone duration.

Test command

Syntax AT+VTD=?

Response +VTD: list of supported <n>s OK

Parameters Refer to set command.

Read command

Syntax AT+VTD?

Response +VTD: <n> OK

Parameters Refer to set command.

Set command

Syntax AT+VTD = <duration>

Response This command refers to an integer <n> that defines the length of tones emitted as a result of the +VTS command. This does not affect the D command.

OK

Parameters

<n>	0	Default settings
	1-255	Duration of the tone in 1/10 seconds.

Reference GSM 07.07 version 4.3.0

AT+VTS

Description DTMF and tone generation.

Test command

Syntax AT+VTS=?

Response +VTS: list of supported <dtmf>s, list of supported <duration>s OK

Parameters Refer to set command.

Set command

Syntax AT+VTS=<dtmf-string>

Response This command allows the transmission of DTMF tones and arbitrary tones in voice mode. For example, these tones can be used when announcing the start of a recording period.

Note: D is used only for dialing.

OK

If error is related to ME functionality:

+CME ERROR: <err>

Note: The command is write only.

Parameters

<dtmf-string>			A maximum length of 20 characters, which must be entered between double quotation marks (" "), and consist of comma-separated combinations of the following:
	<dtmf>		A single ASCII character in the set 0-9,#,*,A-D. This is interpreted as a sequence of DTMF tones, with a duration set by the +VTD command.
	{<dtmf>, <duration>}		Interpreted as a DTMF tone, with a duration set by <duration>.
<duration>	1-255		Duration of the tone in tenths of a second.

Reference GSM 07.07 version 4.3.0.

CME error codes for GSM 07.07 commands

Final result code `+CME ERROR: <err>` indicates an error that is related to mobile equipment or a network. The operation is similar to the `ERROR` result code. None of the following commands are run at the same command prompt. Neither `ERROR` nor `OK` result code is returned.

`<err>` values used by common messaging commands:

Code of `<err>`	Meaning
0	phone failure
1	no connection to phone
2	phone-adapter link reserved
3	operation not allowed
4	operation not supported
5	PH-SIM PIN required
6	PH-FSIM PIN required
7	PH-FSIM PUK required
10	SIM not inserted
11	SIM PIN required
12	SIM PUK required
13	SIM failure
14	SIM busy
15	SIM wrong
16	incorrect password
17	SIM PIN2 required

Code of <err>	Meaning
18	SIM PUK2 required
20	memory full
21	invalid index
22	not found
23	memory failure
24	text string too long
25	invalid characters in text string
26	dial string too long
27	invalid characters in dial string
30	no network service
31	network time out
32	network not allowed - emergency calls only
40	network personalization PIN required
41	network personalization PUK required
42	network subset personalization PIN required
43	network subset personalization PUK required
44	service provider personalization PIN required
45	service provider personalization PUK required
46	corporate personalization PIN required

Code of <err>	Meaning
47	corporate personalization PUK required
100	unknown
101...255	reserved

Chapter 3
GSM 7.05 for SMS

This section provides information on supported AT commands, according to GSM 07.05, for performing SMS and CBS-related operations for both Text and PDU modes.

Command summary

Command	Description
AT+CMGD	delete SMS message
AT+CMGF	select SMS message format
AT+CMGL	list SMS messages from preferred store
AT+CMGR	read SMS message
AT+CMGS	send SMS message
AT+CMGW	write SMS message to memory
AT+CMSS	send SMS message from storage
AT+CMGC	send SMS Command
AT+CNMI	new SMS message indications
AT+CPMS	preferred SMS Message Storage
AT+CRES	restore SMS settings
AT+CSAS	save SMS settings
AT+CSCA	SMS Service Center Address
AT+CSCB	select cell broadcast SMS messages
AT+CSDH	show SMS text mode parameters
AT+CSMP	set SMS text mode parameters
AT+CSMS	select Message Service

AT+CMGD

Description Delete SMS message.

Test command

Syntax `AT+CMGD=?`

Response `OK`

Execute command

Syntax `AT+CMGD=<index>`

Response TA deletes message from preferred message storage <mem1> location <index>.

```
OK
```

If error is related to ME functionality:

```
+CMS ERROR <err>
```

Parameters

`<index>`	Integer type; value in the range of location numbers that are supported by the associated memory.

AT+CMGF

Description Select SMS message format.

Test command

Syntax `AT+CMGF=?`

Response `+CMGF: list of supported <mode>s OK`

Parameters Refer to `set` command.

Read command

Syntax `AT+CMGF?`

Response `+CMGF: <mode> OK`

Parameters Refer to `set` command.

Set command

Syntax AT+CMGF = [<mode>]

Response TA sets parameter to denote which message input and output format to use.

OK

Parameters <mode> 0 PDU mode (default)
1 text mode

AT+CMGL

Description List SMS messages from preferred store.

Test command

Syntax AT+CMGL=?

Response +CMGL: list of supported <stat>s OK

Parameters Refer to execute command.

Execute command

Syntax AT+CMGL [=<stat>]

Parameters <stat>

If text mode:	
"REC UNREAD"	Received unread messages (default).
"REC READ"	Received read messages.
"STO UNSENT"	Stored unsent messages.
"STO SENT"	Stored sent messages.
"ALL"	All messages.
If PDU mode:	
0	(default) Received unread messages.
1	Received read messages.

2	Stored unsent messages.
3	Stored sent messages.
4	All messages.

Response

TA returns messages with status value <stat> from message storage <mem1> to the TE. If the message status is REC UNREAD, status in the storage changes to REC READ.

If text mode (+CMGF=1) and command successful:

for SMS-SUBMITs and/or SMS-DELIVERs:

```
+CMGL:
<index>,<stat>,<oa/da>,[<alpha>],[<scts>][,<tooa/toda>,<length>]<CR><
LF><data>[<CR><LF>

+CMGL:
<index>,<stat>,<da/oa>,[<alpha>],[<scts>][,<tooa/toda>,<length>]<CR><
LF><data>[...]] OK
```

If PDU mode (+CMGF=0) and command successful:

```
+CMGL: <index>,<stat>,[<alpha>],<length><CR><LF><pdu>

[<CR><LF>+CMGL: <index>,<stat>,[alpha],<length><CR><LF><pdu>

[...]] OK
```

If error is related to ME functionality:

```
+CMS ERROR: <err>
```

Parameters

<alpha>	String type alphanumeric representation of <da> or <oa> corresponding to the entry found in MT phone book; the implementation of this feature is manufacturer-specific.
<da>	GSM 03.40 TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters, and the type of address given by <toda>.
<data>	SMS: GSM 03.40 TP-User-Data in text mode responses have the following format: • If <dcs> indicates that GSM 03.38 default alphabet is used and <fo> indicates that GSM 03.40. TP-User-Data-Header-Indication is not set, ME/TA converts GSM alphabet into current TE character set. • If <dcs> indicates that 8-bit or UCS2 data coding scheme is used, or <fo> indicates that GSM 03.40 TP-User-Data-Header-Indication is set, ME/TA converts each 8-bit octet into two IRA character long hexadecimal number (for example, an octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65)). CBS: GSM 03.41 CBM content of message in text mode responses have the following format: • If <dcs> indicates that GSM 03.38 default alphabet is used, ME/TA converts GSM alphabet into current TE character set. • If <dcs> indicates that 8-bit or UCS2 data coding scheme is used, ME/TA converts each 8-bit octet into two IRA character long hexadecimal number.
<length>	An integer type value that indicates, in text mode (+CMGF=1), the length of the message body <data> (or <cdata>) in characters; or, in PDU mode, (+CMGF=0), the length of the actual TP data unit in octets (for example, the RP layer SMSC address octets are not counted in the length).
<index>	An integer type value in the range of location numbers supported by the associated memory.
<oa>	GSM 03.40 TP-Originating-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters, and the type of address given by <tooa>.

<pdu>	SMS: GSM 04.11 SC address followed by GSM 03.40 TPDU in hexadecimal format: ME/TA converts each octet of TP data unit into two IRA character long hexadecimal number (for example, an octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65)). CBS: GSM 03.41 TPDU in hexadecimal format.
<scts>	GSM 03.40 TP-Service-Center-Time-Stamp in time-string format (refer to <dt>).
<toda>	GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format (when first character of <da> is + (IRA 43), default is 145, otherwise default is 129).
<tooa>	GSM 04.11 TP-Originating-Address Type-of-Address octet in integer format (for the defaults, see <toda>).

AT+CMGR

Description Read SMS message.

Test command

Syntax AT+CMGR=?

Response OK

Execute command

Syntax AT+CMGR=<index>

Parameters

<index>	Integer type; value in the range of location numbers supported by the associated memory.

Response TA returns SMS message with location value <index> from message storage <mem1> to the TE. If the message status is REC UNREAD, the status in the storage changes to REC READ.

If text mode (+CMGF=1) and command successful:

For SMS-DELIVER:

```
+CMGR: <stat>,<oa>,[<alpha>],<scts> [,<tooa>,<fo>,<pid>,<dcs>,
<sca>,<tosca>,<length>]<CR><LF><data>
```

For SMS-SUBMIT:

```
+CMGR: <stat>,<da>,[<alpha>] [,<toda>,<fo>,<pid>,<dcs>,[<vp>],
<sca>,<tosca>,<length>]<CR><LF><data>
```

If PDU mode (+CMGF=0) and command successful:

```
+CMGR: <stat>,[<alpha>],<length><CR><LF><pdu> OK
```

f error is related to ME functionality:

```
+CMS ERROR: <err>
```

Parameters

<alpha> String type alphanumeric representation of <da> or <oa> corresponding to the entry found in MT phone book; implementation of this feature is manufacturer-specific.

<da> GSM 03.40 TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters; type of address given by <toda>.

<data> SMS: GSM 03.40 TP-User-Data text mode responses have the following format:

- If <dcs> indicates that GSM 03.38 default alphabet is used and <fo> indicates that GSM 03.40 TP-User-Data-Header-Indication is not set, ME/TA converts GSM alphabet into current TE character set.
- If <dcs> indicates that 8-bit or UCS2 data coding scheme is used, or <fo> indicates that GSM 03.40 TP-User-Data-Header-Indication is set, and the ME/TA converts each 8-bit octet into two IRA character long hexadecimal number (for example, an octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65)).

In the case of CBS: GSM 03.41 CBM Content of Message text mode responses have the following format:

- If <dcs> indicates that GSM 03.38 default alphabet is used, ME/TA converts GSM alphabet into current TE character set.
- If <dcs> indicates that 8-bit or UCS2 data coding scheme is used, ME/TA converts each 8-bit octet into two IRA character long hexadecimal number.

<dcs> Depending on the command or result code, GSM 03.38 SMS Data Coding Scheme (default 0), or Cell Broadcast Data Coding Scheme in integer format.

<fo>	Depending on the command or result code, first octet of GSM 03.40 SMS-DELIVER, SMS-SUBMIT (default 17), SMS-STATUS-REPORT, or SMS-COMMAND (default 2) in integer format.
<length>	Integer type value indicating in the text mode (+CMGF=1) the length of the message body <data> (or <cdata>) in characters; or in PDU mode (+CMGF=0), the length of the actual TP data unit in octets (for example, the RP layer SMSC address octets are not counted in the length).
<mid>	GSM 03.41 CBM Message Identifier in integer format.
<oa>	GSM 03.40 TP-Originating-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters; type of address given by <tooa>.
<pdu>	SMS: GSM 04.11 SC address followed by GSM 03.40 TPDU in hexadecimal format: ME/TA converts each octet of TP data unit into two IRA-character-long hexadecimal numbers (for example, octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65)). CBS: GSM 03.41 TPDU in hexadecimal format.
<sca>	GSM 04.11 RP SC address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters; type of address given by <tosca>.
<scts>	GSM 03.40 TP-Service-Centre-Time-Stamp in time-string format (refer <dt>).
<stat>	0 "REC UNREAD" Received unread messages 1 "REC READ" Received read messages 2 "STO UNSENT" Stored unsent messages 3 "STO SENT" Stored sent messages 4 "ALL" All messages
<toda>	GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129).
<tooa>	GSM 04.11 TP-Originating-Address Type-of-Address octet in integer format (default refer<toda>).
<tosca>	GSM 04.11 RP SC address Type-of-Address octet in integer format (default refer <toda>).
<vp>	Depending on SMS-SUBMIT <fo> setting: GSM 03.40 TP-Validity-Period either in integer format (default 167) or in time-string format (refer <dt>).

Reference GSM 07.05

AT+CMGS

Description Send SMS message.

Test command

Syntax AT+CMGS=?

Response OK

Execute command

Syntax In text mode (+CMGF=1):

+CMGS=<da>[,<toda>]<CR>

text is entered

<ctrl-Z/ESC>

ESC quits without sending

In PDU mode (+CMGF=0):

+CMGS=<length><CR>

PDU is given <ctrl-Z/ESC>

Parameters

<da>	GSM 03.40 TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters; type of address given by <toda>.
<toda>	GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129).
<length>	Integer type value indicating in the text mode (+CMGF=1) the length of the message body <data> (or <cdata>) in characters; or in PDU mode (+CMGF=0), the length of the actual TP data unit in octets (for example, the RP layer SMSC address octets are not counted in the length).

Response TA transmits SMS message from a TE to the network (SMS-SUBMIT). Message reference value <mr> is returned to the TE on successful message delivery. This value can be used to identify a message in a status report code for unsolicited delivery.

If text mode(+CMGF=1) and sending successful:

```
+CMGS: <mr> OK
```

If PDU mode(+CMGF=0) and sending successful:

```
+CMGS: <mr> OK
```

If error is related to ME functionality:

```
+CMS ERROR: <err>
```

Parameters `<mr>` GSM 03.40 TP-Message-Reference in integer format

Reference GSM 07.05

AT+CMGW

Description Write SMS message to memory.

Test command

Syntax `AT+CMGW=?`

Response `OK`

Execute command

Syntax If text mode (+CMGF=1):

`+CMGW[=<oa/da>[,<tooa/toda>]]`

<CR> text is entered

<ctrl-Z/ESC>

<ESC> quits without sending

If PDU mode (+CMGF=0):

`+CMGW=<length><CR>`

PDU is given <ctrl-Z/ESC>

Response

TA transmits SMS message (either SMS-DELIVER or SMS-SUBMIT) from TE to memory storage <mem2>. Memory location <index> of the stored message is returned. By default message status will be set to STO UNSENT (stored unsent) but parameter <stat> allows also other status values to be given.

If writing is successful:

```
+CMGW: <index> OK
```

If error is related to ME functionality:

```
+CMS ERROR: <err>
```

Parameters

<oa>	GSM 03.40 TP-Originating-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters; type of address given by <tooa>.
<da>	GSM 03.40 TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters; type of address given by <toda>.
<tooa>	GSM 04.11 TP-Originating-Address Type-of-Address octet in integer format (for defaults, refer to <toda>).
<toda>	GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129).
<length>	Integer type value indicating in the text mode (+CMGF=1) the length of the message body <data> (or <cdata>) in characters; or in PDU mode (+CMGF=0), the length of the actual TP data unit in octets (for example, the RP layer SMSC address octets are not counted in the length).
<pdu>	SMS: GSM 04.11 SC address followed by GSM 03.40 TPDU in hexadecimal format, ME/TA converts each octet of TP data unit into two IRA character long hexadecimal number (for example, octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65)). CBS: GSM 03.41 TPDU in hexadecimal format.
<index>	Index of message in selected storage <mem2>.

Reference

GSM 07.05

AT+CMSS

Description Send SMS message from storage.

Test command

Syntax `AT+CMSS=?`

Response `OK`

Execute command

Syntax `+CMSS=<index>[,<da>[,<toda>]]`

Response TA sends message with location value <index> from message storage <mem2> to the network (SMS-SUBMIT). If new recipient address <da> is given, it shall be used instead of the one stored with the message. Reference value <mr> is returned to the TE on successful message delivery. Values can be used to identify a message with an unsolicited delivery status report result code.

If text mode(+CMGF=1) and sending successful:

```
+CMGS: <mr> OK
```

If PDU mode(+CMGF=0) and sending successful:

```
+CMGS: <mr> OK
```

If error is related to ME functionality:

```
+CMS ERROR: <err>
```

Parameters

<index>	Integer type; value in the range of location numbers supported by the associated memory.
<da>	GSM 03.40 TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters; type of address given by <toda>.
<toda>	GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129).
<mr>	GSM 03.40 TP-Message-Reference in integer format.

Reference GSM 07.05

AT+CMGC

Description Send SMS command.

Test command

Syntax AT+CMGC=?

Response OK

Execute command

Syntax If text mode (+CMGF=1):

+CMGC=<fo>,<ct>[<pid>[,<mn>[,<da>[,<toda>]]]]<CR>

text is entered

<ctrl-Z/ESC>

ESC quits without sending

If PDU mode (+CMGF=0):

+CMGC=<length><CR>

PDU is given <ctrl-Z/ESC>

Parameters

<fo>	First octet of GSM 03.40 SMS-COMMAND (default 2) in integer format.
<ct>	GSM 03.40 TP-Command-Type in integer format (default 0).
<pid>	GSM 03.40 TP-Protocol-Identifier in integer format (default 0).
<mn>	GSM 03.40 TP-Message-Number in integer format.
<da>	GSM 03.40 TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters; type of address given by <toda>.
<toda>	GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129).
<length>	integer type value indicating in PDU mode (+CMGF=0), the length of the actual TP data unit in octets (for example, the RP layer SMSC address octets are not counted in the length).

Response TA transmits SMS Command message from a TE to the network (SMS-COMMAND). Message reference value <mr> is returned to the TE on successful message delivery. Value can be used to identify message upon unsolicited delivery status report result code.

If text mode(+CMGF=1) and sending successful:

```
+CMGC: <mr> OK
```

If PDU mode(+CMGF=0) and sending successful:

```
+CMGC: <mr> OK
```

If error is related to ME functionality:

```
+CMS ERROR: <err>
```

Parameters <mr> GSM 03.40 TP-Message-Reference in integer format

Reference GSM 07.05

AT+CNMI

Description New SMS message indications.

Test command

Syntax AT+CNMI=?

Response +CNMI: (list of supported <mode>s),(list of supported <mt>s),(list of supported <bm>s),(list of supported <ds>s),(list of supported <bfr>s) OK

Parameters Refer to set command.

Read command

Syntax AT+CNMI?

Response +CNMI: <mode>,<mt>,<bm>,<ds>,<bfr> OK

Parameters Refer to set command.

Set command

Syntax

```
AT+CNMI = [<mode>
[,<mt>[,<bm>
[,<ds>[,<bfr>]]]]]
```

Response

TA selects the procedure for how the receiving of new messages from the network is indicated to the TE when TE is active; for example, DTR signal is ON. If TE is inactive (for example, DTR signal is OFF), message receiving should be done as specified in GSM 03.38.

```
OK
```

If error is related to ME functionality:

```
+CMS ERROR: <err>
```

Parameters

<mode>	0	Buffer unsolicited result codes in the TA. If the TA result code buffer is full, indications can be buffered in another location or the oldest indications can be discarded and replaced with the most recently received indications.
	1	Discard indications and reject new received message unsolicited result codes when TA-TE link is reserved (for example, in on-line data mode). Otherwise forward them directly to the TE.
	2	Buffer unsolicited result codes in the TA when TA-TE link is reserved (for example, in on-line data mode) and flush them to the TE after reservation. Otherwise forward them directly to the TE.
	3	Forward unsolicited result codes directly to the TE. TA-TE link specific inband technique used to embed result codes and data when TA is in on-line data mode.
<mt>		The rules for storing received SMs depend on the data coding scheme (refer GSM 03.38 [2]), preferred memory storage (+CPMS) setting, and the following value:
	0	No SMS-DELIVER indications are routed to the TE.
	1	If SMS-DELIVER is stored into ME/TA, indication of the memory location is routed to the TE using an unsolicited result code: +CMTI: <mem>,<index>

	2	SMS-DELIVERs (except class 2) are routed directly to the TE using an unsolicited result code: +CMT: [<alpha>],<length><CR><LF><pdu> (PDU mode enabled) or +CMT: <oa>, [<alpha>],<scts> [,<tooa>,<fo>,<pid>,<dcs>,<sca>,<tosca>,<length>] <CR><LF><data> (text mode enabled; for information on the parameters in italics, refer command Show Text Mode Parameters +CSDH). Class 2 messages result in indication as defined in <mt>=1.
	3	Class 3 SMS-DELIVERs are routed directly to TE using unsolicited result codes that are defined in <mt>=2. Messages of other classes result in indication as defined in <mt>=1.
<bm>		The rules for storing received CBMs depend on its data coding scheme (refer GSM 03.38 [2]), the setting of Select CBM Types (+CSCB), and the following value:
	0	No CBM indications are routed to the TE.
	2	New CBMs are routed directly to the TE using an unsolicited result code: +CBM: <length><CR><LF><pdu> (PDU mode enabled) or +CBM: <sn>,<mid>,<dcs>,<page>,<pages><CR><LF><data> (text mode enabled).
<ds>	0	No SMS-STATUS-REPORTs are routed to the TE.
	1	SMS-STATUS-REPORTs are routed to the TE using an unsolicited result code: +CDS: <length><CR><LF><pdu> (PDU mode enabled) or +CDS: <fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st> (text mode enabled)
<bfr>	0	The TA buffer of unsolicited result codes that is defined by this command is flushed to the TE when <mode> 1...3 is entered (OK response shall be given before flushing the codes).
	1	The TA buffer of unsolicited result codes that is defined by this command is cleared when <mode> 1...3 is entered.

Unsolicited result code

Syntax	+CMTI: <mem>,<index>	Indication that new message has been received.
	+CMT: ,<length><CR><LF><pdu>	Short message is output directly.
	+CBM: <length><CR><LF><pdu>	Cell broadcast message is output directly.

Reference GSM 07.05

AT+CPMS

Description Preferred SMS message storage.

Test command

Syntax AT+CPMS=?

Response +CPMS: (list of supported <mem1>s),(list of supported <mem2>s) ,(list of supported <mem3>s)

Parameters Refer to set command.

Read command

Syntax AT+CPMS?

Response

```
+CPMS: <mem1>,<used1>,<total1>,<mem2>,<used2>,<total2>,
       <mem3>,<used3>,<total3> OK
```

If error is related to ME functionality:

```
+CMS ERROR
```

Parameters Refer to set command.

Set command

Syntax AT+CPMS = <mem1>
[,<mem2>
[,<mem3>]]

Response TA selects memory storages <mem1>, <mem2> and <mem3> to be used for reading, writing, or other functions.

+CPMS: <used1>,<total1>,<used2>,<total2>,<used3>,<total3> OK

If error is related to ME functionality:

+CMS ERROR:<err>

Parameters

<mem1>	Messages to be read and deleted from this memory storage: "SM" SIM message storage.
<mem2>	Messages will be written and sent to this memory storage: "SM" SIM message storage.
<mem3>	Received messages will be placed in this memory storage if routing to PC is not set ("+CNMI"): "SM" SIM message storage.
<usedx>	Number of messages currently in <memx>.
<totalx>	Number of messages storable in <memx>.

Reference GSM 07.05

AT+CRES

Description Restore SMS settings.

Test command

Syntax AT+CRES=?

Response +CRES: list of supported <profile>s OK

Execute command

Syntax AT+CRES[=<profile>]

Response TA restores SMS settings for +CMGF, +CNMI, +CSDH from non-volatile memory to active memory.

OK

If error is related to ME functionality:

+CMS ERROR:<err>

Parameters <profile> 0 (default) manufacturer-specific profile number where setting are to be stored.

Reference GSM 07.05

AT+CSAS

Description Save SMS settings.

Test command

Syntax AT+CSAS=?

Response +CSAS: list of supported <profile>s OK

Execute command

Syntax AT+CSAS[=<profile>]

Response TA saves current message service settings for +CMGF, +CNMI, +CSDH, to non-volatile memory.

OK

If error is related to ME functionality:

+CMS ERROR:<err>

Parameters <profile> 0 (default) manufacturer-specific profile number where settings are to be stored.

Reference GSM 07.05

AT+CSCA

Description SMS service center address.

Test command

Syntax AT+CSCA=?

Response OK

Read command

Syntax AT+CSCA?

Response +CSCA: <sca>,<tosca> OK

Parameters see set command

Set command

Syntax AT+CSCA = <sca>[,<tosca>]

Response TA updates the SMSC address, through which mobile-originated SMs are transmitted. In text mode, this setting is used by send and write commands. In PDU mode, this setting is used by the same commands, but only when the length of the SMSC address coded into <pdu> parameter equals 0.

OK

Note: The command writes the parameters in non-volatile memory.

Parameters

<sca>	GSM 04.11 RP SC address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters; type of address given by <tosca>
<tosca>	Service center address format GSM 04.11 RP SC address Type-of-Address octet in integer format (for defaults, refer to <toda>)

Reference GSM 07.05

AT+CSCB

Description Select cell broadcast SMS messages.

Test command

Syntax AT+CSCB=?

Response +CSCB: list of supported <mode>s OK

Parameters Refer to set command.

Read command

Syntax AT+CSCB?

Response +CSCB: <mode>,<mids>,<dcss> OK

Parameters Refer to set command.

Set command

Syntax AT+CSCB=
[<mode>[,mids>[,<dcss>]]]

Response TA selects which types of CBMs are to be received by the ME.

OK

Note: The command writes the parameters in non-volatile memory.

Parameters

<mode>	0 message types specified in <mids> and <dcss> are accepted. 1 message types specified in <mids> and <dcss> are not accepted.
<mids>	String type; all different possible combinations of CBM message identifiers (refer <mid>) (default is an empty string); for example, "0,1,5,320-478,922".
<dcss>	String type; all different possible combinations of CBM data coding schemes (refer to <dcs>) (default is an empty string); for example, "0-3,5".

Reference GSM 07.05

AT+CSDH

Description Show SMS text mode parameters.

Test command

Syntax AT+CSDH=?

Response +CSDH: list of supported <show>s OK

Parameters Refer to set command.

Read command

Syntax AT+CSDH?

Response +CSDH:<show> OK

Parameters Refer to set command.

Set command

Syntax AT+CSDH=<show>

Response TA determines whether detailed header information is shown in text mode result codes.

OK

Parameters

<show>	0	Default. Do not show the header values that are defined in commands +CSCA and +CSMP (<sca>, <tosca>, <fo>, <vp>, <pid> and <dcs>) nor <length>, <toda> or <tooa> in +CMT, +CMGL, +CMGR result codes in text mode.
	1	Show the values in result codes.

Reference GSM 07.05

AT+CSMP

Description Set SMS text mode parameters.

Test command

Syntax AT+CSMP=?

Response +CSMP:(list of supported <fo>s),(list of supported <vp>s) OK

Parameters Refer to set command.

Read command

Syntax AT+CSMP?

Response +CSMP:<fo>,<vp> OK

Parameters Refer to set command.

Set command

Syntax AT+CSMP=[<fo>[<vp>[,pid>[,<dcs>]]]]

Response TA selects values for additional parameters needed when SM is sent to the network or placed in a storage when text mode is selected (+CMGF=1). It is possible to set the validity period starting from when the SM is received by the SMSC (<vp> is in range 0... 255) or define the absolute time of the validity period termination (<vp> is a string).

OK

Note: The command writes the parameters in non-volatile memory.

Parameters

<fo>	Depending on the command or result code: first octet of GSM 03.40 SMS-DELIVER, SMS-SUBMIT (default 17), SMS-STATUS-REPORT, or SMS-COMMAND (default 2) in integer format.
<vp>	Depending on SMS-SUBMIT <fo> setting: GSM 03.40 TP-Validity-Period either in integer format (default 167) or in time-string format (refer <dt>).

Reference GSM 07.05

AT+CSMS

Description Select message service.

Test command

Syntax AT+CSMS=?

Response +CSMS: list of supported <service>s OK

Parameters Refer to set command.

Read command

Syntax AT+CSMS?

Response +CSMS: <service>,<mt>,<mo>,<bm> OK

Parameters Refer to set command.

Set command

Syntax AT+CSMS= <service>

Response +CSMS: <mt>,<mo>,<bm> OK

If error is related to ME functionality:

+CMS ERROR: <err>

Parameters

<service>	0	Default. GSM 03.40 and 03.41. The syntax of SMS AT commands is compatible with GSM 07.05 Phase 2 version 4.7.0; Phase 2+ features which do not require new command syntax can be supported (for example, correct routing of messages with new Phase 2+ data coding schemes).
	128	SMS PDU mode - TPDU only used for sending/receiving SMSs.
<mt>		Mobile-terminated messages:
	0	Type not supported.
	1	Type supported.
<mo>		Mobile-originated messages:
	0	Type not supported.

	1	Type supported.
<bm>		Broadcast type messages:
	0	Type not supported.
	1	Type supported.

Reference GSM 07.05

CMS error codes for GSM 07.05 commands

Final result code +CMS ERROR: <err> indicates an error that is related to mobile equipment or network. The operation is similar to ERROR result code. None of the following commands is run at the same command prompt. Neither ERROR nor OK result code is returned.

<err> values used by common messaging commands:

Code of <err>	Meaning
0...127	GSM 04.11 Annex E-2 values, see CME ERROR codes related GSM 07.07
128...255	GSM 03.40 subclause 9.2.3.22 values
300	ME failure
301	SMS service of ME reserved
302	operation not allowed
303	operation not supported
304	invalid PDU mode parameter
305	invalid text mode parameter
310	SIM not inserted
311	SIM PIN required
312	PH-SIM PIN required
313	SIM failure
314	SIM busy
315	wrong SIM
316	SIM PUK required
317	SIM PIN2 required

Code of <err>	Meaning
318	SIM PUK2 required
320	memory failure
321	invalid memory index
322	memory full
330	SMSC address unknown
331	no network service
332	network timeout
340	no +CNMA acknowledgment expected
500	unknown error
...511	other values in range 256...511 are reserved
512...	manufacturer specific
513	unread SM on SIM

Chapter 4
GSM 7.07 for GPRS commands

This section provides information on supported AT commands based on GSM 7.07 for GPRS.

Command summary

Command	Description
AT+CGDCONT	define PDP context
AT+CGQREQ	quality of service profile (requested)
AT+CGQMIN	quality of service profile (minimum acceptable)
AT+CGACT	context activation
AT+CGATT	GPRS attach or detach
AT+CGPADDR	show PDP address
AT+CGCLASS	GPRS mobile station class
AT+CGEREP	control unsolicited GPRS event reporting
AT+CGREG	network registration status
AT+CGSMS	select service for MO SMS messages

AT+CGDCONT

Description Define the PDP context.

Test command

Syntax AT+CGDCONT=?

Response
```
+CGDCONT: (range of supported <cid>s),<PDP_type>,,,(list of supported
<d_comp>s),(list of supported <h_comp>s)[,(list of supported
<pd1>s)[,…[, (list of supported <pdN>s)]]]
[<CR><LF>+CGDCONT: (range of supported <cid>s),<PDP_type>,,,(list of
supported <d_comp>s),(list of supported <h_comp>s)[,(list of
supported <pd1>s)[,…[,(list of supported <pdN>s)]]]
[...]]
```

Parameters Refer to set command.

Read command

Syntax AT+CGDCONT?

Response
```
+CGDCONT:
<cid>,<PDP_type>,<APN>,<PDP_addr>,<data_comp>,<head_comp>[,<pd1>[,…[
,pdN]]]
[<CR><LF>+CGDCONT:
<cid>,<PDP_type>,<APN>,<PDP_addr>,<data_comp>,<head_comp>[,<pd1>[,…[
,pdN]]]
[...]]
```

Parameters Refer to `set` command.

Set command

Syntax
```
AT+CGDCONT=[<cid>[,<PDP_type>[,<APN>[,<PDP_addr>[,<d_comp>[,<h_comp>
[,<pd1>[,…[,pdN]]]]]]]]]
```

Response
```
OK
ERROR
```

Parameters

`<cid>`	PDP Context Identifier: numeric parameter that specifies a PDP context definition. The parameter is local to the TE-MT interface and is used in other PDP context-related commands. The range of permitted values (minimum value = 1) is returned by the test form of the command.
`<PDP_type>`	Packet Data Protocol type: a string parameter that specifies the packet data protocol X25 ITU-T/CCITT X.25 layer 3 IP Internet Protocol (IETF STD 5) OSPIH Internet Hosted Octet Stream Protocol PPP Point to Point Protocol (IETF STD 51).
`<APN>`	Access Point Name: a string parameter, which is a logical name that is used to select the GGSN or the external packet data network. If the value is null or omitted, the subscription value is requested.
`<PDP_addr>`	A string parameter that identifies the MT in the address space applicable to the PDP. If the value is null or omitted, a value can be provided by the TE during the PDP startup procedure or, failing that, when a dynamic address is requested. The read form of the command continues to return the null string even if an address has been allocated during the PDP startup procedure. The allocated address can be read using the `+CGPADDR` command.

<d_comp>	A numeric parameter that controls PDP data compression. Values other than those shown below are reserved: 0 – off (default value) 1 – on
<h_comp>	A numeric parameter that controls PDP header compression. Currently, only one data compression algorithm (V.42bis) is provided in SNDCP. If and when other algorithms become available, a command will be provided to select one or more of these: 0 – off (default) 1 – on
<pd1>,… <pdN>	Zero to *N* string parameters whose meanings are specific to the <PDP_type>. For PDP type OSP:IHOSS the following parameters are defined:

<pd1>=<host>	Fully formed domain name extended hostname of the Internet host.
<pd2>=<port>	TCP or UDP port on the Internet host.
<pd3>=<protocol>	Protocol to be used over IP on the Internet, TCP, or UDP.

Reference TCG8824

AT+CGQREQ

Description Quality of service profile (requested).

Test command

Syntax
```
+CGQREQ=?
```

Response
```
+CGQREQ: <PDP_type>,(list of supported <precedence>s),(list of
supported <delay>s),(list of supported <reliability>s),(list of
supported <peak>s),(list of supported <mean>s)
[<CR><LF>+CGQREQ: <PDP_type>,(list of supported <precedence>s),(list
of supported <delay>s),(list of supported <reliability>s),(list of
supported <peak>s),(list of supported <mean>s)
[…]]
```

Parameters Refer to `set` command.

Read command

Syntax +CGQREQ?

Response
```
+CGQREQ: <cid>,<precedence>,<delay>,<reliability>,<peak>,<mean>
[<CR><LF>+CGQREQ:
<cid>,<precedence>,<delay>,<reliability>,<peak>,<mean>
[…]]
```

Parameters Refer to set command.

Set command

Syntax
```
+CGQREQ=[<cid>[,<precedence>[,<delay>[,<reliability.>[,<peak>[,<mean
>]]]]]]
```

Response
```
OK
ERROR
```

Parameters

<cid>	A numeric parameter that specifies a PDP context definition (refer to +CGDCONT command).

The following parameters are defined in GSM 03.60:

<precedence>	Numeric parameter that specifies the precedence class.
<delay>	Numeric parameter that specifies the delay class.
<reliability>	Numeric parameter that specifies the reliability class.
<peak>	Numeric parameter that specifies the peak throughput class.
<mean>	Numeric parameter that specifies the mean throughput class.

Reference TCG8824

AT+CGQMIN

Description Quality of service profile (minimum acceptable).

Test command

Syntax
```
+CGQMIN=?
```

Response
```
+CGQMIN: <PDP_type>,(list of supported <precedence>s),(list of
supported <delay>s),(list of supported <reliability>s),(list of
supported <peak>s),(list of supported <mean>s)
[<CR><LF>+CGQMIN: <PDP_type>, (list of supported <precedence>s),
(list of supported <delay>s),(list of supported <reliability>s),(list
of supported <peak>s),(list of supported <mean>s)
[…]]
```

Parameters Refer to `set` command.

Read command

Syntax
```
+CGQMIN?
```

Response
```
+CGQMIN: <cid>,<precedence>,<delay>,<reliability>,<peak>,<mean>
[<CR><LF>+CGQMIN:
<cid>,<precedence>,<delay>,<reliability>,<peak>,<mean>
[…]]
```

Parameters Refer to `set` command.

Set command

Syntax
```
+CGQMIN=[<cid>[,<precedence>[,<delay>[,<reliability>[,<peak>[,<mean>
]]]]]]
```

Response
```
OK
ERROR
```

Parameters

`<cid>`	Numeric parameter that specifies a PDP context definition (refer to `+CGDCONT` command).

The following parameters are defined in GSM 03.60:

<precedence>	Numeric parameter that specifies the precedence class.
<delay>	Numeric parameter that specifies the delay class.
<reliability>	Numeric parameter that specifies the reliability class.
<peak>	Numeric parameter that specifies the peak throughput class.
<mean>	Numeric parameter that specifies the mean throughput class.

Reference TCG8824

AT+CGACT

Description PDP context activate or deactivate.

Test command

Syntax +CGACT=?

Response +CGACT: (list of supported <state>s)

Parameters Refer to set command.

Read command

Syntax +CGACT?

Response
```
+CGACT: <cid>,<state>
[<CR><LF>+CGACT: <cid>,<state>
[…]]
```

Parameters Refer to set command.

Set command

Syntax +CGACT=[<state>[,<cid>[,<cid>[,…]]]]

Response
```
OK
ERROR
```

Parameters

<state>	Indicates the state of PDP context activation: 0 – deactivated 1 – activated Other values are reserved and will result in an ERROR response to the execution command.
<cid>	Numeric parameter that specifies a PDP context definition (refer to +CGDCONT command).

Reference TCG8824

AT+CGATT

Description GPRS attach or detach.

Test command

Syntax +CGATT=?

Response +CGATT: (list of supported <state>s)

Parameters Refer to set command.

Read command

Syntax +CGATT?

Response +CGATT: <state>

Parameters Refer to set command.

Set command

Syntax +CGATT= [<state>]

Response
OK
ERROR

Parameters

<state>	Indicates the state of GPRS attachment. Values other than those shown below are reserved and will result in an ERROR response to the execution command: 0 – detached 1 – attached

AT+CGPADDR

Description Show the PDP address. This command dictates the behavior of PPP in the ME but not that of any other GPRS-enabled foreground layer, such as the browser.

Test command

Syntax +CGPADDR=?

Response +CGPADDR: (list of defined <cid>s)

Parameters Refer to set command.

Set command

Syntax +CGPADDR=[<cid>[,<cid>[,…]]]

Response
```
+CGPADDR: <cid>,<PDP_addr>
[<CR><LF>+CGPADDR: <cid>,<PDP_addr>
[...]]
```

Parameters

<cid>	Numeric parameter that specifies a particular PDP context definition (refer to +CGDCONT command). If no <cid> is specified, the addresses for all defined contexts are returned.
<PDP_addr>	String that identifies the MT in the address space applicable to the PDP. The address can be static or dynamic. For a static address, it is the one set by the +CGDCONT command when the context was defined. For a dynamic address, it is the one assigned during the last PDP context activation that used the context definition referred to by <cid>. <PDP_address> is omitted if none is available.

Reference TCG8824

AT+CGCLASS

Description GPRS mobile station class

Test command

Syntax +CGCLASS=?

Response +CGCLASS: (list of supported <class>es)

Parameters Refer to set command.

Read command

Syntax +CGCLASS?

Response +CGCLASS: <class>

Parameters Refer to set command.

Set command

Syntax +CGCLASS= [<class>]

Response
OK
ERROR

Parameters

<class> String parameter that indicates the GPRS mobile class (in descending order of functionality):

A	Class A (highest). This class is not supported by the TTPCom GPRS solution.
B	Class B.
CG	Class C in GPRS only mode. Class C is only supported for <class> values of "CG" and "CC".
CC	Class C in circuit-switched-only mode (lowest).

Reference TCG8824

AT+CGEREP

Description Control unsolicited GPRS event reporting

Test command

Syntax +CGEREP=?

Response +CGEREP: (list of supported <mode>s),(list of supported <bfr>s)

Parameters Refer to set command.

Read command

Syntax +CGEREP?

Response +CGEREP: <mode>,<bfr>

Parameters Refer to set command.

Set command

Syntax +CGEREP=[<mode>[,<bfr>]]

Response
OK
ERROR

Parameters

<mode>	0	Buffer unsolicited result codes in the MT; if MT result code buffer is full, the oldest ones can be discarded. No codes are forwarded to the TE.
	1	Discard unsolicited result codes when MT-TE link is reserved (for example, in online data mode); otherwise forward them directly to the TE.
	2	Buffer unsolicited result codes in the MT when MT-TE link is reserved (for example, in online data mode) and flush them to the TE when MT-TE link becomes available; otherwise forward them directly to the TE.
<bfr>	0	MT buffer of unsolicited result codes defined within this command is cleared when <mode> 1 or 2 is entered.
	1	MT buffer of unsolicited result codes defined within this command is flushed to the TE when <mode> 1 or 2 is entered (OK response shall be given before flushing the codes).

Unsolicited result codes

Syntax

```
+CGEV: NW DEACT <PDP_type>,<PDP_addr>[,<cid>]
+CGEV: ME DEACT <PDP_type>,<PDP_addr>[,<cid>]
+CGEV: NW DETACH
+CGEV: ME DETACH
+CGEV: ME CLASS <class>
```

Parameters

<PDP_type>	Packet Data Protocol type (refer to +CGDCONT command).
<PDP_addr>	Packet Data Protocol address (refer to +CGDCONT command}.
<cid>	Context ID (refer to +CGDCONT command). The <cid> is only returned if it is known to the MT.
<class>	GPRS mobile class (refer to +CGCLASS command).

Reference TCG8824

AT+CGREG

Description Network registration status.

Test command

Syntax

```
+CGREG=?
```

Response

```
+CGREG: (list of supported <n>s)
```

Parameters Refer to set command.

Read command

Syntax

```
CGREG?
```

Response

```
+CGREG: <n>,<stat>[,<lac>,<ci>]
+CME ERROR: <err>
```

Parameters Refer to set command.

Set command

Syntax +CGREG=[<n>]

Parameters

<n>	0	Disable network registration unsolicited result code.
	1	Enable network registration unsolicited result code +CGREG: <stat>.
	2	Enable network registration and location information unsolicited result code +CGREG: <stat>[,<lac>,<ci>].
<stat>	0	Not registered, ME is not currently searching a new operator to which to register.
	1	Registered.
<lac>		String type; two byte location area code in hexadecimal format (for example, the hexadecimal value 00C3 equals the decimal value 195).
<ci>		String type; two-byte cell ID in hexadecimal format.

Reference TCG8824

AT+CGSMS

Description Select service for mobile-originated SMS messages.

Test command

Syntax +CGSMS=?

Response +CGSMS: (list of currently available <service>s)

Parameters Refer to set command.

Read command

Syntax +CGSMS?

Response +CGSMS: <service>

Parameters Refer to set command.

Set command

Syntax `+CGSMS= [<service>]`

Response
```
OK
ERROR
```

Parameters

`<service>` Numeric parameter that indicates the service or service preference to be used:

- 0 GPRS
- 1 Circuit-switched (default).
- 2 GPRS preferred (use circuit switched if GPRS not available).
- 3 Circuit-switched preferred (use GPRS if circuit-switched not available).

Chapter 5
RIM AT commands

This section provides information on custom RIM AT commands.

Command summary

Command	Description
ATRIMRADIO	turn the radio on or off using the software
ATRIMDEVICE	perform a hard reset of the modem
AT+ICCID	return integrated circuit card identification from the SIM card
AT+RCIQ	query cell parameter information
AT+RSCI	RIM select coverage indicator. Indicates which network is providing coverage

ATRIMRADIO

Description Turn the radio on or off using the software.

Execute command

Syntax `ATRIMRADIO?` or `ATRIMRADIO=1`

Response `TA` turns on or off the radio.

```
OK
ERROR
```

Parameters

`=1`	Turns the radio on.
`=0`	Turns the radio off.
`?`	Queries the status of the radio (ON-1, OFF=0).
`=?`	Lists all possible settings.

Description This AT command performs the same behavior as changing the state of PIN 10 (`TurnON`). As noted in the *Integrator Guide*, to minimize power consumption and put the radio modem in sleep mode, turn the radio off and disable the serial port by setting DTR inactive (3V).

ATRIMDEVICE

Description Perform a hard reset of the modem.

Execute command

Syntax `ATMRIMDEVICE=?` or `ATRIMDEVICE=0`

Response The reset line is pulled low, which performs a hard reset of the modem processor and the flash memory. The registers are reloaded from their defaults.

```
OK
ERROR
```

Parameters

`=0`	Resets the radio modem.
`=?`	Returns `RIMDEVICE: (0) OK`.

AT+ICCID

Description Return integrated circuit card identification (ICCID) from the SIM card.

Execute command

Syntax `AT+ICCID or AT+ICCID?`

Response `TA` reads ICCID and returns the value

```
OK
ERROR
```

Parameters

	Returns the ICCID from the SIM card.
?	Returns the ICCID from the SIM card.

AT+RCIQ

Description Query cell parameter information. If the device is not registered with the network when a query is made, the user is notified that the radio modem has not yet been registered with the network.

Execute command

Syntax `AT+RCIQ=? or AT+RCIQ?`

Response TA returns the cell parameter based on the input.

```
OK
ERROR
```

Serving cell information

Cell parameters	Returned parameters
Base Transceiver Station Identity Code (BSIC)	t
Traffic Channel (TCH)	u
Received Signal Strength Indicator (RSSI)	v dBm
Location Area Code (LAC)	w
Cell ID	x

Dedicated channel information

Cell parameters	Returned parameters
Traffic Channel (TCH)	y
Channel Mode	z

Parameters

=?	Lists possible settings (0 to 6).
?	Queries all cell parameters in one command.
=0	Queries serving cell BSIC (parameter `t` from above).
=1	Queries serving cell TCH number (u).
=2	Queries serving cell RSSI in dBM (v).
=3	Queries serving cell LAC (w).
=4	Queries serving cell Cell ID (x).
=5	Queries dedicated channel TCH number (y).
=6	Queries dedicated channel mode (z)\.

AT+RSCI

Description RIM general purpose indicator that specifies the behavior of GPO pin 6 (COV).

Test command

Syntax `AT+RSCI=?`

Response `+RSCI: (list of supported <mode>s) OK`

Parameters Refer to `set` command.

Read command

Syntax `AT+RSCI?`

Response `+RSCI: <mode> OK`

Parameters Refer to `set` command.

Set command

Syntax `AT+RSCI=[<mode>]`

Response `TA` sets the indicator to turn on when a specific circumstance applies.

```
OK
ERROR
```

Parameters

`=0`	Sets the indicator to turn on when in GSM coverage (default).
`=1`	Sets the indicator to turn on when in GPRS coverage.
`=2`	Sets the indicator to turn on when DCD is active Note: To use this as RS-232 DCD, the signal must be inverted.
`=3`	Sets the indicator to turn on when in Data mode
	Returns error.

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